



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

MBA PROFESSIONAL REPORT

**Does a Promise to Join or Joining NATO Impact Military Spending
Patterns of Countries?**

By: Martins Paskevics
June 2008

Advisors: Dr. Jomana Amara,
Dr. Lawrence R. Jones

Approved for public release; distribution is unlimited.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 2008	3. REPORT TYPE AND DATES COVERED MBA Professional Report	
4. TITLE AND SUBTITLE: Does a Promise to Join or Joining NATO Impact Military Spending Patterns of Countries?			5. FUNDING NUMBERS	
6. AUTHOR(S) Martins Paskevics				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this report are those of the author(s) and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) <p>The purpose of this thesis is to find similarities and analyze the changes in military spending (patterns and its structure) of the countries that joined the North Atlantic Treaty Organization (NATO) in the past 15 years.</p> <p>The thesis will address the following issues:</p> <ol style="list-style-type: none"> Whether NATO membership, or a promise to join NATO, impact a country's budgetary behavior and its defense resource allocation the same for all countries, or whether it differs by country, by examining changes in the spending structure five years before joining NATO and after joining NATO Determine if there are any common spending patterns among the countries <p>The author will analyze the military expenditure data for Latvia, Lithuania, Estonia, Poland, Hungary, the Czech Republic, Albania, Croatia and the former Yugoslav Republic of Macedonia (FYROM), cross comparing country data using quantitative analysis (correlation, R-square and t-test for means). The goal is to draw conclusions for whether the spending patterns and trends for the countries mentioned above are moving in the same directions. Does the percentage of GDP allocated for defense needs change in the same pattern for these countries? Are the spending patterns among groups of countries who joined NATO similar, or is there no evidence of change in budgetary behavior due to joining (or promising to join) NATO?</p>				
14. SUBJECT TERMS NATO new member military expenditure, Baltic country military expenditure, Visegrad country military expenditure, Adriatic country military expenditure, NATO new member spending trends			15. NUMBER OF PAGES 105	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

**DOES A PROMISE TO JOIN OR JOINING NATO IMPACT MILITARY
SPENDING PATTERNS OF COUNTRIES?**

Martins Paskevics, Head of Procurement Control Section, Ministry of Defense,
Republic of Latvia

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
June 2008**

Authors:

Martins Paskevics

Approved by:

Dr. Jomana Amara, Lead Advisor

Dr. Lawrence R. Jones, Support Advisor

Robert N. Beck, Dean
Graduate School of Business and Public Policy

THIS PAGE INTENTIONALLY LEFT BLANK

DOES A PROMISE TO JOIN OR JOINING NATO IMPACT MILITARY SPENDING PATTERNS OF COUNTRIES

ABSTRACT

The purpose of this thesis is to find similarities and analyze the changes in military spending (patterns and its structure) of the countries that joined the North Atlantic Treaty Organization (NATO) in the past 15 years.

The thesis will address the following issues:

1. Whether NATO membership, or a promise to join NATO, impact a country's budgetary behavior and its defense resource allocation the same for all countries, or whether it differs by country, by examining changes in the spending structure five years before joining NATO and after joining NATO
2. Determine if there are any common spending patterns among the countries

The author will analyze the military expenditure data for Latvia, Lithuania, Estonia, Poland, Hungary, the Czech Republic, Albania, Croatia and the former Yugoslav Republic of Macedonia (FYROM), cross comparing country data using quantitative analysis (correlation, R-square and comparison of means). The goal is to draw conclusions for whether the spending patterns and trends for the countries mentioned above are moving in the same directions. Does the percentage of GDP allocated for defense needs change in the same pattern for these countries? Are the spending patterns among groups of countries who joined NATO similar, or is there no evidence of change in budgetary behavior due to joining (or promising to join) NATO?

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	PROBLEM STATEMENT AND RESEARCH METHODOLOGY	3
III.	THEORETICAL BACKGROUND	5
IV.	ANALYSIS METHODS	9
A.	CORRELATION ANALYSIS	9
B.	COMPARISON OF MEANS ANALYSIS	11
V.	DESCRIPTION OF THE DATA GATHERING	13
VI.	EMPIRICAL STUDY.....	15
A.	NATO ENLARGEMENT PROCESS.....	15
1.	General Principles.....	15
2.	The 1995 Study on NATO's Enlargement	16
3.	Mechanisms of Enlargement.....	18
B.	COUNTRY ANALYSIS	22
1.	Introduction.....	22
2.	Poland (1999).....	23
a.	<i>Background Information on the Armed Forces of Poland...</i>	23
b.	<i>Spending Before NATO</i>	24
c.	<i>Spending After Joining NATO</i>	27
3.	Czech Republic (1999).....	27
a.	<i>Background Information on the Czech Armed Forces</i>	27
b.	<i>Spending Before NATO</i>	29
c.	<i>Spending After Joining NATO</i>	30
4.	Hungary (1999).....	31
a.	<i>Background Information on the Armed Forces of Hungary.....</i>	32
b.	<i>Spending Before NATO</i>	33
c.	<i>Spending After Joining NATO</i>	34
5.	Baltic Countries (Latvia, Estonia, Lithuania)	34
a.	<i>Latvia (2004)</i>	35
b.	<i>Estonia (2004)</i>	39
c.	<i>Lithuania (2004)</i>	42
6.	Albania (Joins NATO 2009).....	45
a.	<i>Background Information on the Armed Forces of Albania..</i>	47
b.	<i>Spending Before NATO</i>	47
c.	<i>Spending in the Last Five Years before Invitation to Join NATO.....</i>	48
7.	Croatia (Joins NATO 2009)	49
a.	<i>Background Information on the Armed Forces of Croatia ..</i>	51
b.	<i>Spending Before NATO</i>	52
8.	FYROM (Macedonia).....	53

	a.	<i>Background Information on the Armed Forces of FYROM</i>	54
	b.	<i>Military Expenditure in the Last Ten Years</i>	55
9.	Summary.....		56
	a.	<i>Countries Independent Prior to 1990</i>	56
	b.	<i>Baltic Countries</i>	57
	c.	<i>Adriatic Countries (Croatia, FYROM, except Albania)</i>	57
VII.	ANALYSIS		59
A.	GDP COMPARISONS		59
1.	Visegrad Countries		59
2.	Baltic Countries.....		60
3.	Adriatic Countries		61
4.	Comparison of All Three Enlargement Country Groups' Economic Development		63
B.	MILITARY EXPENDITURE (ME) AS % OF GDP COMPARISON FIVE YEARS PRIOR AND AFTER NATO ENTRANCE		64
1.	Visegrad Countries		65
2.	Baltic Countries.....		66
3.	Adriatic Countries		66
4.	Comparison of All Three Enlargement Groups' Commitment to Military Expenditures in Terms of % of GDP.....		67
C.	COMPARISON OF COUNTRY GROUP MEAN ME TO ME=2% OF GDP		69
1.	Visegrad Country ME Comparison to ME = 2% of GDP		70
2.	Baltic Country ME Comparison to ME = 2% of GDP.....		70
3.	Adriatic Country ME Comparison to ME = 2% of GDP		71
VIII.	TRENDS IN ME BY CATEGORIES AFTER ACCESSION TO NATO		73
A.	NATO MEMBERS BEFORE ACCESSION TO NATO		73
B.	NEW NATO MEMBER SPENDING PATTERNS		75
1.	Spending on Personnel		75
2.	Spending on Equipment		77
3.	Spending on Infrastructure.....		78
4.	Spending on Other Expenditure (Expenditures not Covered in Other Categories: Transportation, Communications, Administrative Expenditures).....		79
IX.	CONCLUSIONS		81
A.	GENERAL OBSERVATIONS.....		81
B.	NEW NATO MEMBER AND NATO INVITEE ME MEAN COMPARISON TO ME AS 2% OF GDP		81
C.	NEW NATO MEMBER AND NATO INVITEE GDP CHANGE IN PERCENT CORRELATION		81
D.	NEW NATO MEMBER AND NATO INVITEE ME AS % OF GDP RELATIONSHIPS.....		82

E. NEW NATO MEMBER ME SPENDING CATEGORY TRENDS AND PATTERNS.....	82
LIST OF REFERENCES	85
INITIAL DISTRIBUTION LIST	91

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	New NATO members (since 1999) and aspirants and NATO accession mechanisms (From: NATO)	16
Table 2.	Amount (million 2005 \$) military expenditures of Poland (From: SIPRI)	25
Table 3.	Amount (%GDP) military expenditures of Poland (From: SIPRI).....	26
Table 4.	Poland's GDP percent change 1990 -2006 (From: World Bank data)	26
Table 5.	Czech Republic GDP growth % 1990 – 2007 (From: World Bank Data).....	29
Table 6.	Czech Republic military expenditure as % of GDP 1994 – 2003 (From: SIPRI)	30
Table 7.	Czech Republic military expenditure in million \$ (2005) 1994 – 2003 (From: SIPRI)	31
Table 8.	Hungary GDP growth % 1990 – 2007 (From: World Bank data)	32
Table 9.	Hungary military expenditure as % of GDP 1994 – 2003 (From: SIPRI).....	33
Table 10.	Hungary military expenditure as % of GDP 1994 – 2003 (From: SIPRI).....	34
Table 11.	Latvia GDP growth % 1990 – 2006 (From: World Bank data).....	37
Table 12.	Latvia military expenditure as % of GDP 1997 – 2006 (From: SIPRI).....	38
Table 13.	Latvia, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	38
Table 14.	Estonia, GDP growth % 1990 – 2006 (From: World Bank data)	40
Table 15.	Estonia military expenditure as % of GDP 1997 – 2006 (From: SIPRI).....	41
Table 16.	Estonia, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	41
Table 17.	Lithuania, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	43
Table 18.	Lithuania, GDP growth % 1990 – 2006 (From: World Bank data).....	44
Table 19.	Lithuania, military expenditure as % of GDP 1997 – 2006 (From: SIPRI)	45
Table 20.	Albania, GDP growth % 1990 – 2006 (From: World Bank data)	46
Table 21.	Albania , military expenditure as % of GDP 1997 – 2006 (From: SIPRI).....	49
Table 22.	Albania, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	49
Table 23.	Croatia, GDP growth % 1990 – 2006	51
Table 24.	Croatia, military expenditure as % of GDP 1997 – 2006 (From: SIPRI).....	52
Table 25.	Croatia, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	53
Table 26.	FYROM, GDP growth % 1991 – 2006.....	54
Table 27.	FYROM, military expenditure as % of GDP 1997 – 2006 (From: SIPRI).....	55
Table 28.	FYROM, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)	56
Table 29.	Visegrad countries GDP growth (annual %) (From: World Bank)	60
Table 30.	Correlation analysis of Visegrad country GDP growth (annual %)	60
Table 31.	Baltic countries GDP growth (annual %) (From: World Bank)	61
Table 32.	Correlation analysis of Baltic country GDP growth (annual %)	61
Table 33.	Adriatic countries GDP growth (annual %) (From: World Bank).....	62

Table 34.	Correlation analysis of Adriatic country GDP growth (annual %)	62
Table 35.	Visegrad, Baltic and Adriatic countries GDP growth (annual % on average)	63
Table 36.	Correlation analysis of Visegrad, Adriatic and Baltic country GDP growth (annual % in average)	64
Table 37.	Visegrad countries ME as % of GDP (From: SIPRI)	65
Table 38.	Correlation analysis of Visegrad country ME as % of GDP	65
Table 39.	Baltic countries ME as % of GDP (From: SIPRI)	66
Table 40.	Correlation analysis of Baltic country ME as % of GDP	66
Table 41.	Adriatic countries ME as % of GDP (From: SIPRI)	67
Table 42.	Correlation analysis of Adriatic country ME as % of GDP	67
Table 43.	Adriatic, Visegrad and Baltic countries Average ME as % of GDP	68
Table 44.	Correlation analysis of Visegrad, Adriatic and Baltic country ME in average as % of GDP	68
Table 45.	Visegrad, Baltic and Adriatic country ME as % of GDP 5 years before NATO accession and after accession/invitation to NATO	69
Table 46.	Visegrad countries ME to 2% of GDP	70
Table 47.	Baltic countries ME to 2% of GDP	70
Table 48.	Adriatic country ME to 2% of GDP	71
Table 49.	Visegrad, Baltic country Personnel expenditure as % of total ME (From: NATO)	76
Table 50.	Visegrad, Baltic country Personnel expenditure as % of total ME (From: NATO)	76
Table 51.	Visegrad, Baltic country Equipment expenditure as % of total ME (From: NATO)	77
Table 52.	Visegrad, Baltic country Equipment expenditure as % of total ME (From: NATO)	78
Table 53.	Visegrad, Baltic country Infrastructure expenditure as % of total ME (From: NATO)	78
Table 54.	Visegrad, Baltic country Infrastructure expenditure as % of total ME (From: NATO)	79
Table 55.	Visegrad, Baltic country Other expenditure in % of total ME (From: NATO)	80
Table 56.	Visegrad, Baltic country Other expenditure in % of total ME (From: NATO)	80

I. INTRODUCTION

Alliances expand by the time-tested method of adding members who share the same interests and values. Forming and joining these alliances always demands some resources allocated from the countries who want to commit themselves to participation in them. Security, which results from defense, is not a free good in economic terms.

As with all expenditures, defense expenditures involve a trade off of other goods and services, raising controversies about military versus social-welfare spending and whether defense is a benefit or burden to an economy.¹

The same can be said of the twelve countries that formed NATO in 1949—by signing the North Atlantic Treaty all countries agreed that:

- They are determined to safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law.
- They seek to promote stability and well-being in the North Atlantic area.²

NATO expanded its membership and the alliance was joined by other countries who wanted to share this common feeling of security and to contribute to this trans-Atlantic security system: Greece and Turkey (1952), West Germany (1955) and Spain (1982). In fact, the defense spending of NATO members represented their response to the perceived threat from the Soviet Union and its allies in the Warsaw Pact.³

After the collapse of the USSR in 1991 and the end of the Cold War the border and defense lines between the opposing sides were erased. But still countries from the former Warsaw Pact wanted to join NATO to share the perceived protection and benefits

¹ Keith Hartley and Todd Sandler, *The Economics of Defense Spending – An International Survey* (Routledge, 1990), 1.

² The North Atlantic Treaty, (Washington, 1949), NATO website <http://www.nato.int/docu/basic/txt/treaty.htm> (accessed May 20, 2008).

³ Hartley and Sandler, *The Economics of Defense Spending*, 4.

of membership of the alliance as challenges arose. This later group included Hungary, the Czech Republic and Poland in 1999; and Estonia, Latvia, Lithuania, Slovenia, Slovakia, Bulgaria and Romania in 2004.

This thesis only examines the similarities among country groups which are closely linked by entrance time to NATO (the Visegrad countries of Poland, Hungary and the Czech Republic) or historical background (the Baltic countries of Latvia, Estonia, and Lithuania; and the Adriatic countries of Croatia, Albania, and FYROM).

In order to examine similarities among the countries that joined NATO after the Cold War, the author will analyze:

1. the changes in military expenditure structure of the countries (Poland, Hungary and the Czech Republic) who joined NATO in 1999 after the collapse of the Soviet Union
2. the changes in military expenditure structure of the Baltic States (Latvia, Estonia, and Lithuania) who joined NATO in the post 9/11 era
3. the military spending patterns and trends of current and future NATO members, and NATO aspirants (Albania, Croatia and FYROM)

The thesis will attempt to identify similarities among the military spending trends and patterns among each group of NATO entrants—did they experience the same resource shifting challenges? Secondly, the author will cross-compare the spending trends and patterns for similarities among all three groups of new NATO members and aspirant countries—are there any repeating patterns before and after official NATO membership, and if yes what are these patterns and what were the budgetary implications of those patterns? The thesis will draw conclusions on country military expenditure behavior before and after NATO membership.

In addition, the thesis will analyze the changes in the behavior of these countries in the military procurement field—changes in the spending ratios among different spending categories such as personnel, equipment, infrastructure and other expenditures (according to the NATO spending data classification).

II. PROBLEM STATEMENT AND RESEARCH METHODOLOGY

This thesis will study how the military expenditure behavior of the NATO member and aspirant countries has changed on their way to full-fledged NATO membership in the different phases in relations with NATO; it will also investigate similarities (if any) among NATO member states that joined NATO at different time periods (Poland, Czech Republic, Hungary in 1999; Latvia, Estonia and Lithuania in 2004; and current NATO aspirants Albania, Croatia and FYROM).

Quantitative research methodology with emphasis on statistical analysis will be used to find relationships among the countries' military spending data using the following metrics—changes in the defense spending/gross domestic product relationship, changes in the defense spending structure by categories of the sample countries. The gathered data will be examined and interpreted, and generalizations made in order to make assumptions on future behavior of current NATO aspirants.

The author will use military spending data available from the Stockholm International Peace Research Institute database on the countries' military expenditures.⁴ Information on the SIPRI definition of military expenditure can be found on the SIPRI website.⁵

Data on country military expenditures and other information from the North Atlantic Treaty organizations official website⁶ will be used to determine the ratios among different spending positions such as personnel, equipment, infrastructure and other expenditures (according to the NATO spending data classification).

⁴ Stockholm International Peace Research Institute website, http://www.sipri.org/contents/milap/milex/mex_definition.html (accessed May 20, 2008).

⁵Ibid.

⁶ NATO website, <http://www.nato.int/docu/pr/> (accessed May 20, 2008).

Also, Gross domestic product data for different years for the corresponding countries from the World Bank website⁷ will be used to complement the data sources mentioned above.

⁷ World Bank website, <http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=135> (accessed May 20, 2008).

III. THEORETICAL BACKGROUND

Keith Hartley and Todd Sandler describe the North Atlantic Treaty Organization as follows: “NATO is a voluntary international club which specializes in providing collective defense (a public good). Nations will join the club and remain members so long as membership is expected to be worthwhile (benefits exceed costs).”⁸ It means that all countries who want to join the “club” expect that the benefits to be received will outweigh the costs which they will incur.

But the problem is that an alliance built on the premise that all expect to benefit more (receive more security and stability) than they contribute will eventually collapse. That is why several countries are willing to over contribute—get less than they contributed—in order to achieve other certain intangible goals such as building trust and relationships, and expanding their influence and culture.

NATO members contribute to the Alliance in various ways. The most significant means by far is through funding and the deployment of their respective armed forces in support of NATO missions.

Over the past decade, as the alliance has undertaken enlargement, current member countries have been providing bilateral assistance to prospective future members. Defense analysts point out that the NATO allies also contribute to mutual security in many other ways.⁹

Still, scholars like to see country contribution in monetary, military and measurable resource terms — to determine which countries are over contributing to the alliance and which countries are free riders. This is a new branch of economics; science and the theoretical basis for such research is usually no older than 20-30 years.

Defense economics is a relatively new and expanding branch of economics. It involves the application of macro and micro economic

⁸ Hartley and Todd Sandler, “NATO Burden-Sharing: Past and Future,” *Journal of Peace Research*, 1999, Vol. 36, No. 6, 665-680.

⁹ Carl W. Ek, *NATO Common Funds Burden sharing: Background and Current Issues*, (Congressional Research Service, Library of Congress, 2006), 1.

theory to issues of defense, disarmament and peace. Studies of defense spending in different countries add to our limited knowledge in this developing field of economics.¹⁰

As formulated by K. Hartley and Todd Sandler, in the model explaining the demand for military expenditure:

$ME = f(\text{income (income factors which impact countries ME)}, \text{spilling (spilling of demand for ME from other areas)}, \text{threat (countries' security situation)}, \text{economic variables (economic factors, which impact countries' development)}, \text{political variables (countries' internal and external political situation)}, \text{dummies (other factors which could impact the demand for ME)})$; ¹¹ it is clear that, when looking into country defense spending, it is very hard to isolate different aspects of the equation (political variables, dummies, threats).¹² There are even more sub-variables we could add to the equation: climate, geographical location, alliance memberships, religion, etc. Therefore, measuring defense expenditure is a very complex issue and must be approached with caution.

A variety of indicators to measure burden sharing can be formulated and classified into the following categories:

1. Military quantitative – size of the armed forces, population pool for conscription, number of military equipment available
2. Military qualitative – quality of the armed forces, training, funding and readiness levels of the respective units, quality and effectiveness of the military equipment available to fulfill mission goals
3. Civil quantitative – number of contributions to humanitarian mission, economic aid provided, assistance to refugees
4. Civil qualitative indicators – quality of the help provided, impact and effectiveness of the contribution

¹⁰ Hartley and Sandler, *The Economics of Defense Spending*, xv.

¹¹ Ibid., 7.

¹² The author will use only budgetary and GDP data (income variable) to draw comparisons among countries, without taking into account other variables of the military expenditure equation: $ME = f(\text{income, spilling, threat, economic variables, political variables, dummies})$.

The military indicators distinguish among expenditure, the components of defense budgets, national contributions to NATO, final outputs in the form of force effectiveness, and contributions to peacekeeping. Data on some of these indicators is not available in the public domain (e.g., force effectiveness).

Where data are available, the spending levels on the various categories need to be placed in perspective. For example, contributions to NATO common funding (e.g. infrastructure) average less than 1% of total NATO defense spending: hence, over contributing to common funding does not make up for under contributing to defense, because common funding is so small.¹³

The data may be analyzed with the following burden sharing metrics (methods):

1. Defense spending as percent of GDP - relationship between military (defense) spending and national gross domestic product:

This relationship is the most commonly used measure of defense burdens; however, it has limitations. Nations can differ in their definitions of defense spending (e.g., pensions, defense R&D), and some countries rely on conscript forces so that their defense budgets underestimate their defense burdens (as reflected in opportunity costs).¹⁴ In addition, there are several more limitations on the usage of this measure of a nation's contribution to defense spending:

- Countries have different mixes of public and country-specific defense forces (nuclear and conventional forces and the geographical distribution of their conventional forces between home protection).¹⁵
- Nations might apply the economic principle of substitution using alternative methods of providing protection, reflecting each nation's comparative advantage in resources (e.g., equipment replacing manpower, nuclear forces replacing conventional forces).¹⁶
- Differences are also likely to arise in the efficiency with which various nations convert defense expenditures into combat-effective armed forces.

¹³ Hartley and Sandler, "NATO Burden-Sharing: Past and Future," 665.

¹⁴ Ibid., 665.

¹⁵ Ibid., 665.

¹⁶ Ibid., 665.

- Some nations might have highly inefficient forces which would not be evident from D/GDP measures, although the impact on force effectiveness might be assessed by examining various components of the defense budget.¹⁷
- Various quantitative indicators show the strength of a nation's commitment to NATO as reflected in its willingness to support the alliance leader (e.g., basing and over flight rights for U.S. air raids on Libya).¹⁸

2. Defense spending as percent of National budget - relationship between military spending and overall government spending

3. Per capita Defense spending - relationship between military spending and a country's population

4. Defense spending per servicemen - relationship between military spending and the number of servicemen in each country.

In order to analyze the similarities and differences between country military expenditure data the author will use defense spending (military expenditure) as percent of GDP in the development of this thesis.

¹⁷ Hartley and Sandler, "NATO Burden-Sharing: Past and Future," 665.

¹⁸ Ibid., 665.

IV. ANALYSIS METHODS

The gathered GDP and budgetary (income) data from the countries will be analyzed using correlation analysis, R^2 analysis and the comparison of population means in order to see if there are any associations between the data sets and then to draw conclusions concerning possible relationships between the data sets. If some degree of relationship is there, then the author can make conclusions concerning the impact of NATO membership invitation and NATO membership on country military expenditure.

A. CORRELATION ANALYSIS

Correlation analysis is done to measure the degree of association or correlation that exists between two variables. The coefficient (r) of determination calculated for this purpose measures the strength of the relationship that exists between the two (or more) variables – military expenditure to GDP ratio data from two or more NATO aspirant and member countries. It assesses the proportion of variance in the dependent variable that has been accounted by the regression equation.¹⁹

Main emphasis in correlation is the degree to which the linear model describes the relationship between two variables X and Y. The correlation coefficient (r) for a sample can be calculated as following:

$$r_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{(n-1)s_x s_y}$$

where \bar{x} and \bar{y} are the sample means of X and Y, s_x and s_y are the sample standard deviations of X and Y. The sum is from $i = 1$ to n . The correlation coefficient may take on any value between plus and minus one:

$$-1.00 \leq r \leq +1.00$$

¹⁹ Morris Hamburg, *Basic Statistics: A Modern Approach* (Harcourt Brace Jovanovich Inc, 1974), 237.

The sign of the correlation coefficient (+, -) defines the direction of the relationship, either positive or negative. A positive correlation coefficient means that as the value of one variable increases also the value of the other variable increases; conversely, as one decreases, the other decreases. A negative correlation coefficient indicates that as one variable increases, the other decreases, and vice-versa. The author expects to find positive and strong correlation between the country data sets in order to draw the conclusion that NATO membership invitation and NATO membership has influence on countries military expenditure increase and there is a common pattern in the military expenditure behavior between the countries who joined NATO in the last 15 years and the countries who are invited to join and want to join NATO currently.

Taking the absolute value of the correlation coefficient measures the strength of the relationship. A correlation coefficient of $r = |0.50|$ indicates a stronger degree of linear relationship than one of $r = |0.40|$. Likewise, a correlation coefficient of $r = |-0.50|$ shows a greater degree of relationship than one of $r = |0.40|$. Thus, a correlation coefficient of zero ($r=0.0$) indicates the absence of a linear relationship and correlation coefficients of $r=+1.0$ and $r=-1.0$ indicate a perfect linear relationship.

In addition, the correlation coefficient is a measure of the degree of closeness of the linear relationship between two variables.

Two properties of r should be noted:

1. r is a pure number without units or dimensions, because the scales of its numerator and denominator are both the products of the scales in which X_1 and X_2 are measured. One useful consequence is that r can be computed from coded values of X_1 and X_2 . No decoding is required.
2. r always lies between -1 and +1. Positive values of r indicate a tendency of X_1 and X_2 to increase together. When r is negative, large values of X_1 are associated with small values of X_2 .²⁰

²⁰ George W. Snedecor and William G. Cochran, *Statistical Methods*, 6th ed. (The Iowa State University Press, 1974), 174.

The analysis will use also R^2 (squared coefficient of determination) to analyze the relationships between the military expenditure to GDP ratio data from the sample countries in order to sustain his assumption that NATO membership invitation and NATO membership has influenced country military spending behavior (R^2 may be described as the proportion of the variance of Y that can be attributed to its linear regression on X, while $(1-r^2)$ is the proportion free from X)²¹.

B. COMPARISON OF MEANS ANALYSIS

This thesis will use the comparison between the population means (for each country ME expenditure data separately as for country groups – Visegrad, Baltic and Adriatic countries in general) in order to investigate the difference of the assumed military expenditure mean data of ME=2% of GDP (informal NATO requirement) and the real (sample) military expenditure data.

This will give the author the opportunity to analyze whether the countries, as country groups, are committing to ME the NATO required 2% of GDP, or if they are not fulfilling this NATO informal requirement.

This requirement is important, as the level of 2% of GDP committed to military expenditures is regarded as the proper level for a country to contribute to NATO according to its means.

²¹ Snedecor and Cochran, *Statistical Methods*, 176.

THIS PAGE INTENTIONALLY LEFT BLANK

V. DESCRIPTION OF THE DATA GATHERING

Data was gathered from available print and electronic sources. Data from the official NATO website (www.nato.int) was used to gather data on military spending categories and their ratios in military budgets for NATO member countries for the purposes of this thesis as also information on relationship history between corresponding countries and NATO was gathered.

Official defense ministry websites of Latvia, Lithuania, Estonia, Poland, Spain, Albania, Croatia and the Former Yugoslav Republic of Macedonia was used to gather information concerning the development of the armed forces of the corresponding countries.

Scientific, statistical and research publications on economic development data (GDP changes in percent) of countries was obtained from the World Bank website (www.worldbank.org).

In addition the Stockholm International Peace Research Institute (www.sipri.org) database of country military expenditures (until year 2006) was used to draw comparison between country military expenditures and form conclusion about possible associations in the data samples – all ME data is in the format used by the Stockholm International Peace Research Institute (U.S. dollars of 2005). GDP data for 2006 was drawn from World Bank and SIPRI data.

THIS PAGE INTENTIONALLY LEFT BLANK

VI. EMPIRICAL STUDY

A. NATO ENLARGEMENT PROCESS

1. General Principles

The Parties may, by unanimous agreement, invite any other European state in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area to accede to this Treaty. *Article 10, The North Atlantic Treaty Washington DC, 4 April 1949*

Since 1949, the number of NATO member countries has increased from twelve NATO founding countries to 26 following two post-Cold-War enlargements. The Czech Republic, Hungary and Poland joined the Alliance in March 1999, following an invitation issued at the 1997 Madrid Summit Meeting; while Latvia, Estonia Bulgaria, Romania, Slovenia, Lithuania and Slovakia joined in 2004, after receiving the invitation at the 2002 Prague Summit Meeting.²²

Already since the Washington Summit Meeting in April 1999 NATO leaders underlined the continuing openness of the Alliance to further new members and pledged that NATO would continue to welcome new members in a position to further the principles of the Treaty and contribute to peace and security in the Euro-Atlantic area.²³

Even after these large accessions — which more than doubled the original number of members — NATO continues to adhere to the openness policy adopted in 1999; the member states agreed that NATO enlargement is an ongoing process, not a single event.²⁴

²² Jim Garamone, “NATO Invites Seven Nations to Join,” Defense Link Website, <http://www.defenselink.mil/news/newsarticle.aspx?id=42466> (accessed May 20, 2008).

²³ “The Process of NATO Enlargement,” NATO website, <http://www.nato.int/docu/handbook/2001/hb0301.htm> (accessed May 20, 2008).

²⁴ “The 1995 Study on NATO's Enlargement,” NATO website, <http://www.nato.int/docu/handbook/2001/hb030101.htm> (accessed May 20, 2008).

Several other countries have expressed their willingness to join NATO and begun NATO accession preparation procedures for full fledged membership: Albania, Croatia and FYROM. To facilitate an easier accession of the new members into NATO the alliance has developed specific tools to accommodate a smooth introduction of the new members into the alliance.

In order to better facilitate the smooth transition to NATO requirements NATO is using the MAP (Membership Action Plan) which is specifically designed to provide advice and feedback to countries aspiring to join.²⁵

Table 1. New NATO members (since 1999) and aspirants and NATO accession mechanisms (From: NATO)

Country	Partnership for Peace	Membership Action Plan	Joined NATO
<i>Poland</i>	1994	-	1999
<i>Hungary</i>	1994	-	1999
<i>Czech Republic</i>	1994	-	1999
<i>Latvia</i>	1994	1999	2004
<i>Lithuania</i>	1994	1999	2004
<i>Estonia</i>	1994	1999	2004
<i>Albania</i>	1994	2002	Invited in 2008, will join in 2009
<i>Croatia</i>	2000	2002	Invited in 2008, will join in 2009
<i>FYROM</i>	1995	1999	Not invited to join, until official name issues with Greece are solved

2. The 1995 Study on NATO's Enlargement

At the Brussels Summit in 1994, NATO leaders reaffirmed that NATO still has an open door policy to other European states if they are ready to follow the principles of the

²⁵ "The Process of NATO Enlargement."

Washington Treaty and to contribute to security in the North Atlantic area. Building on this, in December 1994 Alliance Foreign Ministers determined the “why and how” criteria of future admissions into the Alliance, which were examined by the Allies during 1995.²⁶

A study was completed after the meeting and the resulting “Study on NATO Enlargement” was shared with interested Partner countries in September 1995 and made public. The guidelines given in this study are still applicable to NATO enlargements today.

The reason for conducting the study was to answer the question of why NATO should expand after the end of the Cold War; the answer was that there is still a need for and a unique opportunity to build improved security in the whole of the Euro-Atlantic area, without re-creating dividing lines.²⁷ In addition, NATO is facing more global threats now and new members can assist in NATO’s peacekeeping efforts.

The study concluded the following:

1. NATO will remain a defensive Alliance.
2. NATO will encourage and support democratic reforms, including the establishment of civilian and democratic control over military forces.
3. NATO will increase transparency in defense planning and military budgets, thereby reinforcing confidence among states, and will reinforce the tendency toward integration and cooperation in Europe.
4. Furthermore, NATO will strengthen the Alliance’s ability to contribute to European and international security and support peacekeeping under the United Nations or OSCE (Organization for Security and Co-operation in Europe); and it will strengthen and broaden the transatlantic partnership.²⁸

²⁶ “The Process of NATO Enlargement.”

²⁷ Ibid.

²⁸ Ibid.

New members will be accepted according to the Article 10 prerequisites and they will become full-fledged members after completing certain procedures and fulfilling certain benchmarks. At the same time countries must conform to all NATO requirements in practice and not only on paper - they must have real capabilities. Countries that have internal or external disputes (democracy issues, unsolved border disputes etc.) should solve them by peaceful means before becoming members.

Ultimately, the Study concluded, Allies would decide by consensus whether to invite each new member to join, basing their decision on their judgment - at the time such a decision has to be made - of whether the membership of a specific country would contribute to security and stability in the North Atlantic area or not. No country outside the Alliance has a veto or 'droit de regard' over the process of enlargement or decisions relating to it.²⁹

3. Mechanisms of Enlargement

Analyzing both NATO enlargements after the end of the Cold War and also the current enlargement procedure, some scholars offer the following five stages to define the enlargement procedure:

1. Development of military cooperation with the given country under the auspices of the Partnership for Peace (PfP) initiative
2. A step-up in PfP cooperation that may include an implicit or explicit formulation of aspiration to membership by the given country and actions within PfP to advance that goal
3. Consensus-building within NATO regarding the given country's eligibility for consideration for membership, crowned with NATO's open recognition of the aspiration
4. Detailed scrutiny of the pros and cons of the country's potential accession and discussion of the country's shortcomings in meeting membership pre-conditions
5. Intra- alliance bargaining as to when the country will be invited to join.³⁰

²⁹ "The Process of NATO Enlargement."

³⁰ Thomas S. Szayna, *NATO Enlargement, 2000-2015 Determinants and Implications for Defense Planning and Shaping* (Rand Corporation, 2001), 44.

Stage one of the accession procedure is basically the expression of the countries wish to join NATO and the realignment of common defense and security directions. Each country is making the statement that its security and defense priorities are aligned with NATO's security and defense priorities. This step is one of the easiest, but there are cases when countries had not received the "green light" from NATO – like Croatia was not able to join PfP until May 2000, when the government started an internal democratization process.³¹

Partnership for Peace (PfP) is an important initiative introduced by NATO at the January 1994 Brussels Summit Meeting of the North Atlantic Council. The aim of the Partnership is to enhance stability and security throughout Europe.³² NATO addressed the PfP Invitation to all states participating in the North Atlantic Cooperation Council (NACC) and also to other states participating in the Conference for Security and Cooperation in Europe (CSCE, now OSCE) who were interested, able and of course willing to contribute to this partnership among countries promoting initiative.

The invitation has since been accepted by a total of 33 countries.³³ The accession to the Alliance of the ten former PfP countries (Czech Republic, Hungary, Poland, Latvia, Lithuania, Estonia, Bulgaria, Romania, Slovenia, and Slovakia) brings the current number of PfP participants to 23.³⁴

The activities which each Partner undertakes in relations to NATO and other Partner countries are based on jointly (NATO – country) elaborated Individual Partnership Programs. The PfP programs main focuses is on defense-related cooperation, but it also goes beyond dialogue and cooperation in the military and defense field in order to forge real partnerships between Partner countries and NATO.³⁵

³¹ Szayna, *NATO Enlargement*, 44.

³² "Signatures of NATO PfP," NATO website, <http://www.nato.int/pfp/sig-cntr.htm> (accessed May 20, 2008).

³³ Ibid.

³⁴ Ibid.

³⁵ "Partnership for Peace," NATO website, <http://www.nato.int/docu/handbook/2001/hb030201.htm> (accessed May 20, 2008).

Stage two of the accession procedure signals that the country is ready to develop and strengthen its relationship to NATO, which could result in a full fledged NATO membership. But this is not always the case (as countries do not always desire to become NATO members); for example Switzerland has been active in non-military PfP activities for years, thus signaling its desire to cooperate with other countries, but not to join NATO³⁶.

Stage three is the mid point of the accession procedure when the military cooperation grows into an eventual membership to NATO. In Stage two, a country can state that it wants to join NATO, but in Stage three the ball is on the NATO side and it is the NATO side that declares the intent to accept or not a country in the alliance; since 1999 the tool for declaring such intent is the Membership Action Plan (MAP) process, which helps to transform the vision of NATO membership into reality – if a country has started this process there is a certain probability of full fledged NATO membership in future.

MAP process was started in April 1999 to assist those countries (mostly those countries that joined NATO in 2004) who wish to join the Alliance in their preparations by providing advice, assistance and practical support on all aspects of NATO membership. Its main features are:

- the submission by aspiring members of individual annual national programs on their preparations for possible future membership, covering political, economic, defense, resource, security and legal aspects
- a focused and candid feedback mechanism on aspirant countries' progress on their programs that includes both political and technical advice, as well as annual 19+1(now 26+1) meetings at Council level to assess progress
- a clearing house to help coordinate assistance by NATO and by member states to aspirant countries in the defense/military field
- a defense planning approach for aspirants which includes elaboration and review of agreed planning targets³⁷

³⁶ Szayna, *NATO Enlargement*, 44.

³⁷ “The Membership Action Plan,” NATO website, <http://www.nato.int/docu/handbook/2001/hb030103.htm> (accessed May 20, 2008).

Aspirant countries are expected to achieve certain goals not only in the military field but also in the *political and economic* fields. These non military goals include different political and economic activities including, but not limited to - settling any international, ethnic or external territorial disputes by peaceful means; demonstrating a commitment to the rule of law and human rights; establishing democratic control of their armed forces; and promoting stability and well-being through economic liberty, social justice and environmental responsibility³⁸.

Of course countries military capabilities and readiness - which is captured in the *defense and military* activity list in the MAP focus on the ability of the country to contribute to collective defense and to the Alliance's new missions – is the new member bringing added value to the alliance (is a contributor) or just wants to harvest the benefits provided by the NATO membership.

Full participation in PfP is an essential component, because through their individual PfP programs which specifically include goals for each country, aspirants can focus on essential membership related issues. Partnership Goals for aspirants include planning targets covering those areas which are most directly relevant for nations aspiring to NATO membership.³⁹

Resource issues focus on the need for any aspirant country to commit sufficient resources to defense to allow them to meet the commitments that future membership would bring in terms of collective NATO undertakings.⁴⁰

Security issues center on the need for aspirant countries to make sure that procedures are in place to ensure the security of sensitive information.

Legal aspects address the need for aspirants to ensure that legal arrangements and agreements which govern cooperation within NATO are compatible with domestic legislation.⁴¹

³⁸ “The Membership Action Plan.”

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

Placing a country in this (third) stage of the NATO accession process is usually done by a public statement from the NATO side. There are several examples (Ukraine, Finland) where because of different reasons active participation in Stage 2 activities does not guarantee the move to the next stage – phase four of the accession procedure.⁴²

Stage four starts when the countries' aspiration efforts are recognized by NATO and the intra alliance discussion on the countries' weaknesses starts. Countries then are evaluated compared to the criteria listed in the 1995 NATO Enlargement study – do they fulfill them or no.

Then in multilateral as bilateral meetings, at various levels, between the aspirant and NATO country representatives a schedule is agreed for the country specific MAP process – to correct certain weaknesses before NATO accession in order to be seen as a qualified candidate for membership. When the minimum requirements are met, the accession process goes to its final stage.

Stage five is the final stage of the NATO accession process where the country receives an official invitation to join NATO — of course, such an invitation can be achieved only after an intra-alliance bargaining procedure, and consensus recognition among NATO members that the aspirant country has fulfilled Stage 4 minimum requirements and is ready to join NATO.⁴³

B. COUNTRY ANALYSIS

1. Introduction

In this chapter of the thesis the historical and economic background of each of the NATO member countries (Poland, Hungary, Czech Republic, Latvia, Estonia and Lithuania) mentioned in this paper, as well as the historical background of the countries who were invited to join NATO in 2009 (Croatia and Albania) will be reviewed. The

⁴² Szayna, *NATO Enlargement*, 44.

⁴³ *Ibid.*, 44.

background of FYROM, which was not invited to join NATO in 2009, will also be reviewed. The development of ME trends in these countries after the end of the Cold War will be discussed.

2. Poland (1999)

After the Second World War, Poland hoped to get back its independence, but was occupied by the Red Army; this led to establishment of a pro-Soviet regime in Poland which lasted until 1989, when the first free elections in postwar Poland were held and democratic forces triumphed.

After the collapse of the Soviet Union, Poland, which was a founding member of the Warsaw Pact (Treaty of friendship, co-operation and mutual assistance) in 1955,⁴⁴ wanted to leave the Soviet sphere of influence and in 1991 stated its interest to join NATO.⁴⁵

To gain faster admittance to NATO, Poland joined the PfP program in 1994 (five years prior to NATO membership) to modernize its armed forces according to NATO standards. In 1999, Poland joined the North Atlantic Treaty organization.

Poland joined NATO at a difficult time — the Alliance was facing major changes and challenges: enlargement, new threats, new missions, new technology, and declining defense budgets.⁴⁶

a. Background Information on the Armed Forces of Poland

During the Cold War, the Polish armed forces were second in size only to the USSR in the Warsaw Pact, numbering 897,000 (406,000 active and 491,000 reserves) in 1988; that number dropped to 731,500 (296,500 active and 435,000 reserves) in

⁴⁴ “Treaty of Friendship, Co-operation and Mutual Assistance,” Fordham University website, <http://www.fordham.edu/halsall/mod/1955warsawpact.html> (accessed May 20, 2008).

⁴⁵ “Poland in NATO,” Warsaw Voice website, <http://www2.warsawvoice.pl/old/v542/nato/n7.htm> (accessed May 20, 2008).

⁴⁶ Hartley and Sandler, “NATO Burden-Sharing: Past and Future,” 665.

1992.⁴⁷ This huge decrease can be explained by the fact that the Ministry of National Defense (MoND) cut forces as fast as possible.

To accommodate these huge changes in the personnel strength, the Polish armed forces and General Staff have been under constant reform and reorganization since the early 1990s, when the Cold War ended. International operations within NATO and the EU are the key drivers for force development. Poland's military has almost halved since the end of the Warsaw Pact, under the terms of a 1991 plan.⁴⁸

Currently the Polish military conscripts 67,500 persons annually (around 40 per cent of the total number of the personnel) and plans are there to reduce the number of conscripts to 58,500 by 2008, when it is intended that at least 60 per cent of military personnel will be volunteers.

Poland wants to increase the share of volunteers in the armed forces to 65 percent in 2010. In addition Poland has already amended the conscript service time in the armed forces – it has decreased since 2005, from 12 to 9 months.

The drive toward fully professional armed forces should be complete in 2012, when conscription will be suspended. Ministry of National Defense plans state that 2,180 professional privates are to be assigned to 11 army units, 250 to 28 air force and air-defense units and 450 to the navy. Another 180 should be serving with military police and intelligence units.⁴⁹

b. Spending Before NATO

After the end of the Cold War, Poland was left with a broken economy and huge armed forces and was in urgent need of military transformation.⁵⁰ A vital need

⁴⁷ “Poland’s Armed Forces,” Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-10798.html> (accessed May 20, 2008).

⁴⁸ Christian Le Miére, *Sentinel, Security Assessment - Central Europe And The Baltic States* (Jane’s Defense Review, 2007).

⁴⁹ Le Miére, *Sentinel, Security Assessment - Central Europe And The Baltic States*.

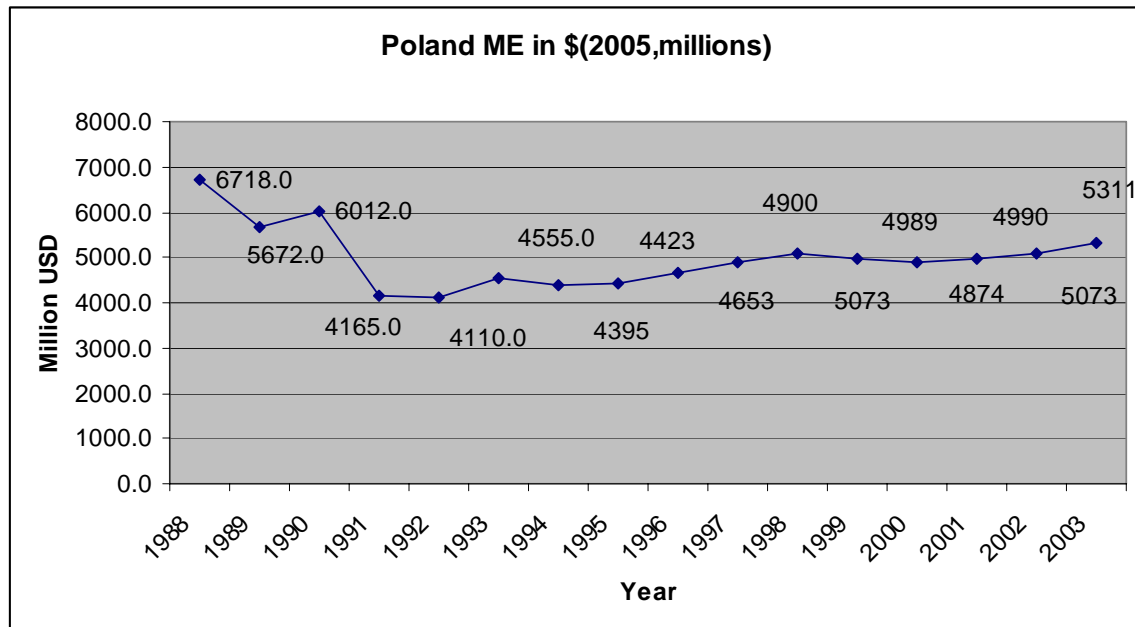
⁵⁰ “Poland’s Armed Forces.”

for the newly democratic country was to decrease the portion of military expenditures in the state budget and as a portion of the GDP.

Therefore, it is likely to find a big decrease in military spending for Poland after the Cold War — from 1990 to 1991 alone the decrease was 1,847 million dollars or 31.7%. These expenditure cuts also came with large cuts in the number of military personnel.

But after 1994, it is possible to see a gradual increase in Polish military expenditures in terms of dollars spent, because Poland joined the PfP initiative as a stepping stone to NATO membership, the declared target since 1991.

Table 2. Amount (million 2005 \$) military expenditures of Poland (From: SIPRI)

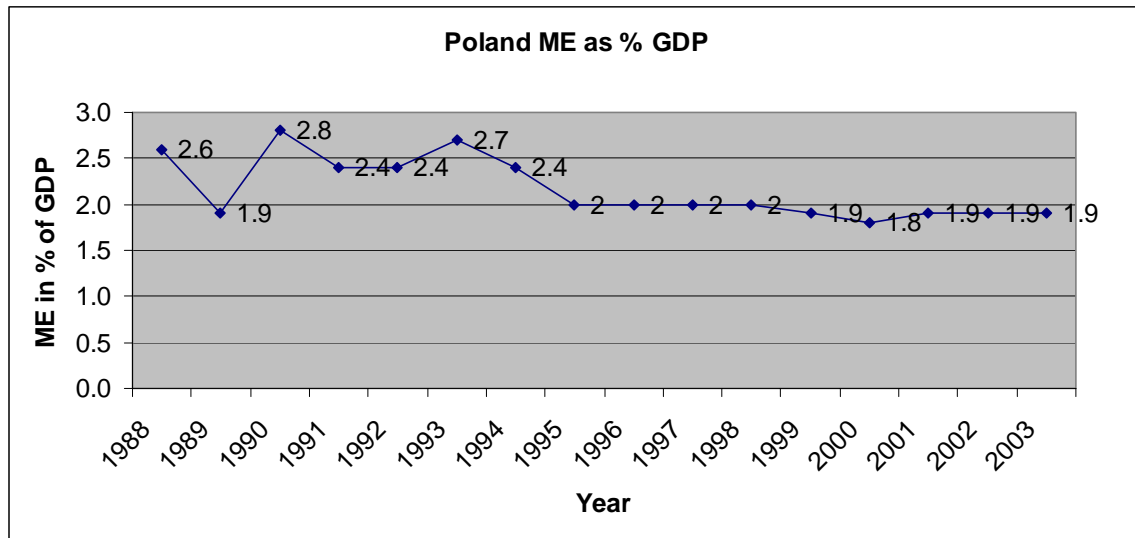


The percentage of GDP spent on the military drops significantly after the end of the Cold War – there is no need for such large armed forces anymore in a struggling economy – due to transition to a free market economy.

Then in 1992 the military expenditure increases again — probably (as discussed above) due to the expressed political will of Poland to join NATO and also due to Polish participation in PfP beginning in 1994,

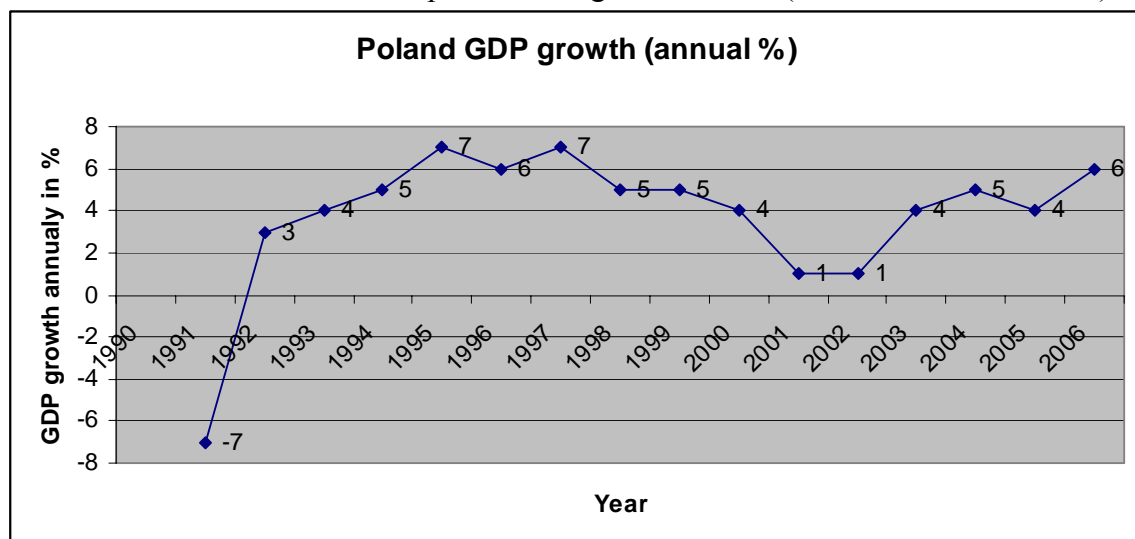
Since 1995, Poland has been holding military expenditures to about 2% of GDP (the informal NATO requirement for member states) GDP.

Table 3. Amount (%GDP) military expenditures of Poland (From: SIPRI)



Poland has actually decreased its spending as percentage of GDP starting from the year 1999, though in actual dollars the expenditures are increasing. This can be explained by the fact that during the 1990s Poland experienced very fast economic growth and development, thus growing its GDP .

Table 4. Poland's GDP percent change 1990 -2006 (From: World Bank data)



c. Spending After Joining NATO

After Poland joined NATO in 1999, the contribution in terms of percent of GDP spent for military needs decreased; in 1998 Poland spent 2% of GDP for military needs, but thereafter until 2003 it was never higher than 1.9% of GDP.

Also, in fiscal terms there was a decrease of military expenditures after 1998 (the year prior to accession to NATO), with the 1998 level of \$5,073 million (according to SIPRI data) not reached again until 2002, due to Poland's strong support of the U.S. in the War on Terror.

3. Czech Republic (1999)

After the collapse of the Soviet Union, the Czech Republic was among the most eager countries to flee the influence sphere of Russia as early as possible to join NATO and the European Union. Lodged firmly in the memory of the population was 1968, when an invasion by Warsaw Pact troops ended the efforts of the country's leaders to liberalize Communist Party rule and create "socialism with a human face".⁵¹

The Czech Republic was the larger of two countries to emerge from the breakup of the former Czechoslovakia on 1 January 1993; this so called "velvet divorce" formed the Czech Republic and Slovakia. A year later, the Czech Republic joined the European Union,⁵² and in 1999, NATO. As with other former Eastern bloc countries during the 1990s, the Czech Republic struggled to adapt its economy to the new situation; most countries found it a hard transition from socialist to market economy.

a. Background Information on the Czech Armed Forces

During the last years of the Warsaw Pact there were approximately 201,000 personnel on active duty in the CSLA (Czechoslovak People's Army) in 1987,

⁵¹ "Czech Republic Fact Book," CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/cz.html> (accessed May 20, 2008).

⁵² Ibid.

about 145,000 (72%) of whom served in the ground forces (commonly referred to as the army). Of these, about 100,000 were conscripts.⁵³

But the Czech military underwent several transformation procedures in the 90s; personnel end-strength was cut from 106,101 in 1991 to 67,702 (excluding civilians) in 1995.⁵⁴ This was done in response to NATO admission requirements. In 1994, the Czech Republic joined the Partnership for Peace Program, which helped the Czech armed forces to adopt NATO procedures and NATO standards, increased interoperability with NATO forces. The Czech Republic completed its accession talks and became a NATO member, together with Hungary and Poland, on 12 March 1999.

However, the armed forces remained bigger than necessary for the new situation. For instance, in 1997 the Defense Ministry still employed more than 80,000 persons (24,000 of whom were civilians), or 25,000 more than planned in the first reform concept approved in 1993. In addition, between 1996 and 1998, a number of measures implemented according to various lower-level doctrinal documents, army development concepts and acquisition plans were made in a conceptual vacuum. This was because older, high-level strategic documents were no longer valid and new reviews were only approved at the beginning of 1999.⁵⁵

The low speed of military reforms can be traced back to the fact that, during the early-to-late 90s, the main priority of the government was the improvement of the economic situation. GDP growth was slow during the early and mid 1990s.

⁵³ “Czech Republic Armed Forces,” Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-3751.html> (accessed May 20, 2008).

⁵⁴ Vassil Danov, *Comparative Analysis of the Reforms in the Armies of the Czech Republic, Hungary, Poland and Bulgaria during 1990 – 1998 Period* (NATO Research Fellowship Program, 2001), Fig I/1.

⁵⁵ Jiri Sedivy, “Czech Military Transformation: An Analysis,” *Military Technology*, vol. 29, no. 5, 2005, 33-40.

Table 5. Czech Republic GDP growth % 1990 – 2007 (From: World Bank Data)



Even the national security and military strategy review, approved a few weeks before the public joining of NATO in March 1999, largely ignored opportunities - such as identifying niches and focusing on developing specialized, higher-value-added capabilities for the Alliance's multinational forces. Only after the 2002 Prague Summit did this change.

In summer 2001, the government approved terms of reference for what was supposed to be the last major reform of the Czech Army—a shift toward a professional force in the beginning of 2005.⁵⁶ Reductions in armed forces personnel strength continued and in 2006 the Czech army had the size of 26,000 military personnel.⁵⁷

b. Spending Before NATO

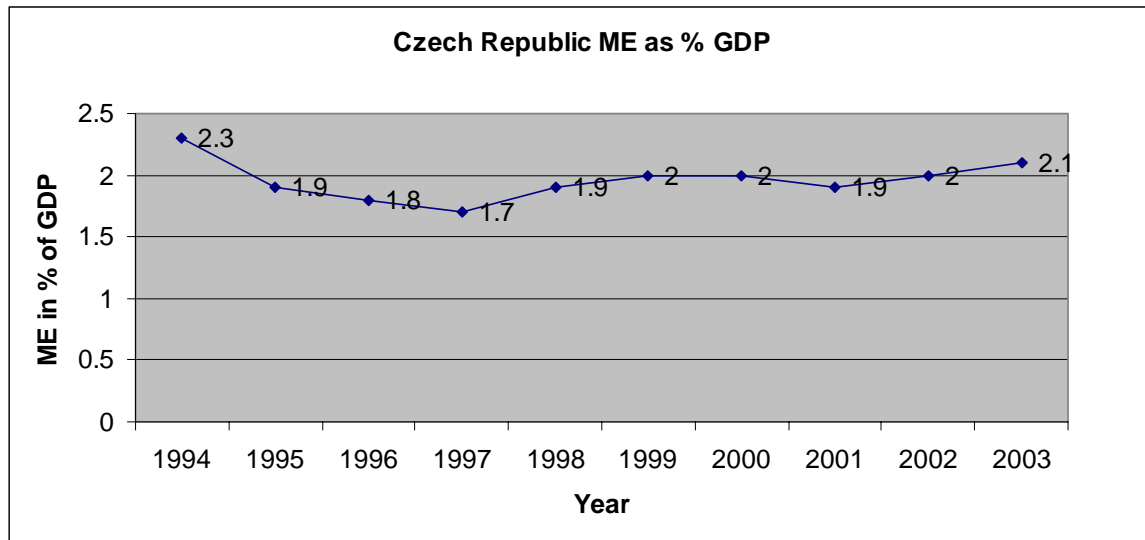
After the end of the Cold War, the Czech Republic was left with large armed forces which needed to be transformed in order to be sustainable.

⁵⁶ "Professional Army," Czech Ministry of Defense website, <http://www.army.cz/scripts/detail.php?id=5762> (accessed May 20, 2008).

⁵⁷ "NATO – Russia Compendium of Financial and Economic Data Relating to Defense for 2006," NATO website, <http://www.nato.int/docu/pr/2006/p06-159.pdf> (accessed May 20, 2008).

As mentioned earlier, given the pressing fiscal situation of the countries' militaries, expenditure was not a priority of the government until 1998—one year prior to NATO accession. This was the first year in the 1990s when defense military expenditures increased compared to the previous year, from 1.7% of the GDP to 1.9% of the GDP.

Table 6. Czech Republic military expenditure as % of GDP 1994 – 2003 (From: SIPRI)



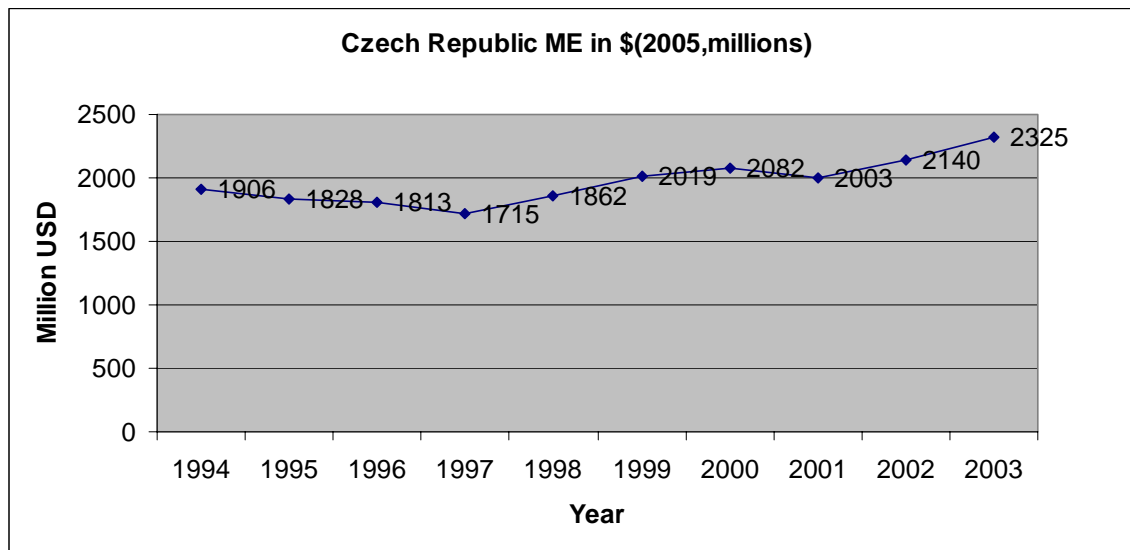
c. *Spending After Joining NATO*

After joining NATO in 1999, the Czech Republic was one of the few new members who continued to commit resources at around 2% GDP to ME (2% of GDP in 1999, 2000 and 2002 and 2.1% of the GDP in 2003).

After 2003, a decline of the military expenditure commitment can be noticed—1.9% of GDP in 2004 and 1.8% in 2005. Probably one of the reasons behind this decrease is the shift of government priorities to mitigate the damages caused to the country by flooding in summer 2002.⁵⁸

⁵⁸ Prague Post website, <http://www.praguepost.com/P02/2002/20814/news1.php> (accessed May 20, 2008).

Table 7. Czech Republic military expenditure in million \$ (2005) 1994 – 2003
(From: SIPRI)



4. Hungary (1999)

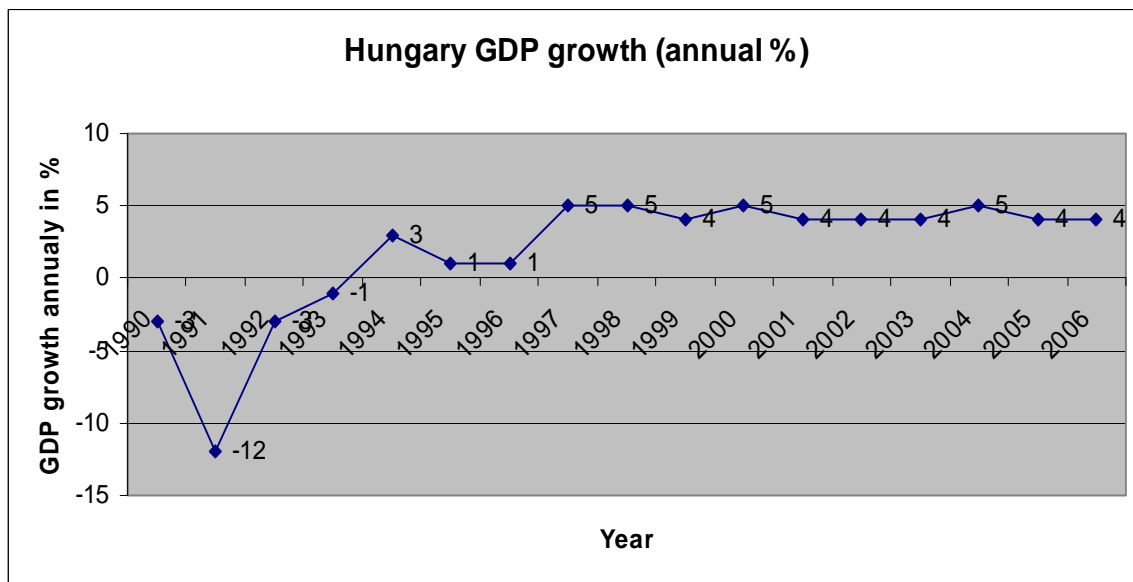
In 1956 Hungary, which like the rest of Eastern Europe fell under the communist rule against which Hungary revolted, announced its withdrawal from the Warsaw Pact. This announcement was met with a massive military intervention by Moscow. But after that, the Hungarian government under the leadership of Janos Kadar in 1968 was allowed to liberalize its economy—introducing so-called "Goulash Communism."⁵⁹

In 1990, Hungary held its first multiparty elections and started the transition to a free market economy, joining the European Union in 1994.

The fact that “Goulash Communism” was already in place since the 70s helped the country to smoothen the economic transition and there was not as much economic turbulence as experienced in the neighboring countries.

⁵⁹ “Hungary Fact Book,” CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/hu.html> (accessed May 20, 2008).

Table 8. Hungary GDP growth % 1990 – 2007 (From: World Bank data)



Within four years of the collapse of communism, nearly half of the country's economic enterprises had been transferred to the private sector, and by 1998 Hungary was attracting nearly half of all foreign direct investment in its region.⁶⁰ In 1999, Hungary joined NATO, together with Poland and the Czech Republic.

a. Background Information on the Armed Forces of Hungary

During the Cold War, the Hungarian armed forces were one of the smallest in the Warsaw Pact—approximately 100,000 personnel were on active duty in the Hungarian Peoples Army in 1988, of which about 64,000 were conscripts (excluding civilian personnel).⁶¹ One of the main reasons behind this fact was that 200,000 Soviet Army troops were stationed in the country, filling many of Hungary's defense needs by their presence. Hungary ranked last, along with Bulgaria and Romania, in the number of military helicopters, and only Romania had fewer tanks.

⁶⁰ "Country Profile Hungary," BBC website, http://news.bbc.co.uk/1/hi/world/europe/country_profiles/1049641.stm, (accessed May 20, 2008).

⁶¹ "Hungarian Armed Forces," Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-5939.html> (accessed May 20, 2008).

During the last decade, the Hungarian army underwent a transformation that cut its armed forces from 121,600 (including 27,600 civilians) to 74,463 (including 17,115) in 1996.⁶²

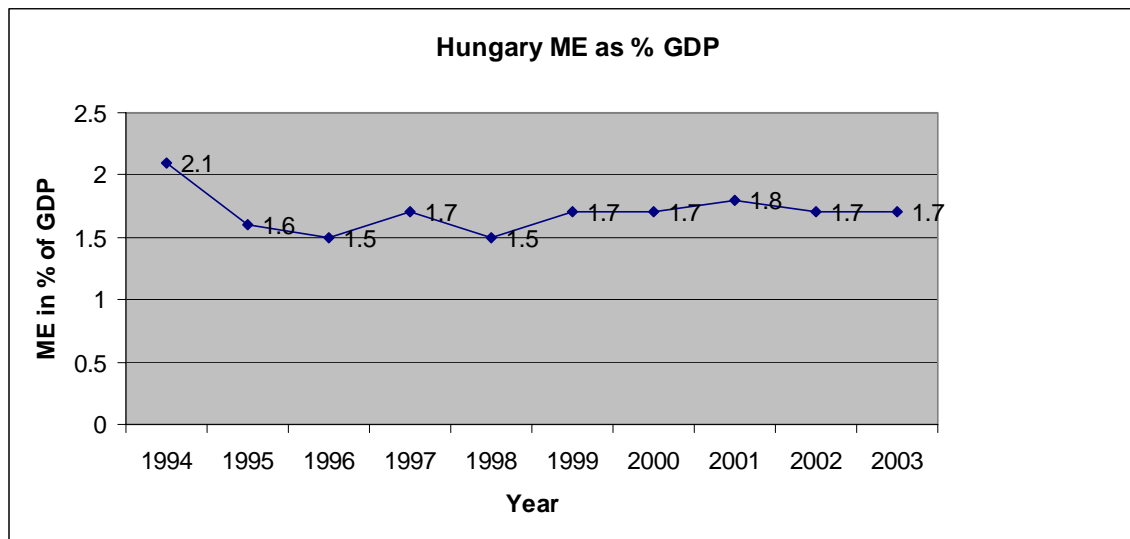
Hungary finished its armed forces transformation in 2004, switching to a professional military at a current level of 23,000 personnel.⁶³

b. Spending Before NATO

As mentioned before, Hungary's transition to a market economy in the early 90s was easier than it had been for neighboring countries, but as had a relatively ineffective force compared to other former Warsaw Pact countries, more investment was needed to rebuild the Hungarian armed forces.

Therefore, Hungary spent more than 2.1% of GDP on military expenditures until 1994, when it joined PfP; but thereafter, military spending never again reached 2% of GDP.

Table 9. Hungary military expenditure as % of GDP 1994 – 2003 (From: SIPRI)



⁶² Vassil Danov, *Comparative Analysis of the Reforms in the Armies of the Czech Republic, Hungary, Poland and Bulgaria during 1990 – 1998 Period*, Fig I/1Fig II/1.

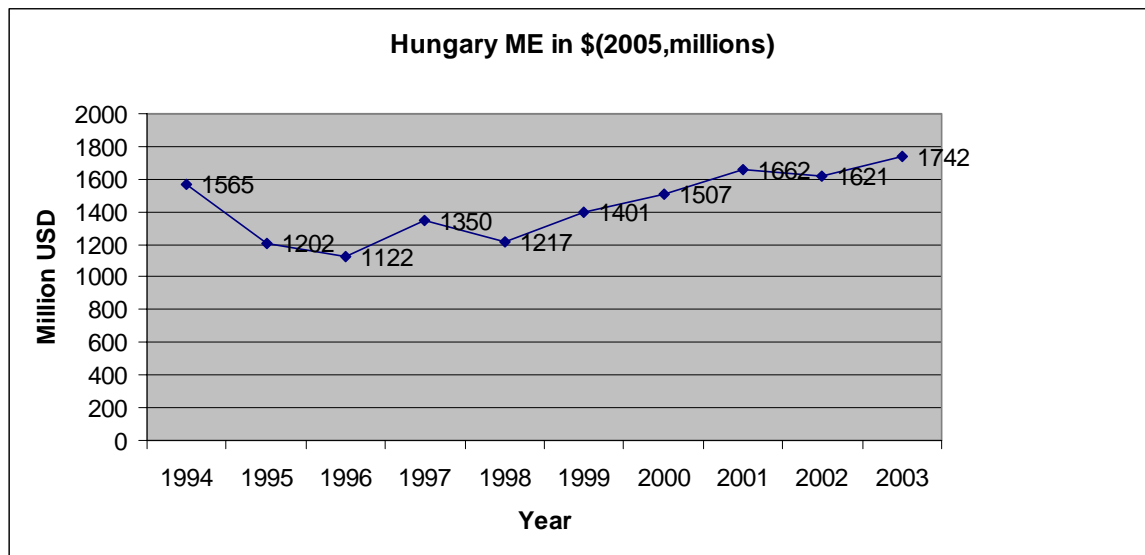
⁶³ “NATO – Russia Compendium of Financial and Economic Data Relating to Defense for 2006,” NATO website, <http://www.nato.int/docu/pr/2006/p06-159.pdf> (accessed May 20, 2008).

Hungary increased its military spending prior to accession to NATO in 1998, from 1.5% of GDP in 1998 to 1.7% of GDP in 1999. In fiscal terms, the increase was from \$1.21 to \$1.40 billion.

c. Spending After Joining NATO

After joining NATO in 1999, the Hungarian commitment to military expenditure was 1.7–1.8% of GDP for the years 1999–2003; it then dropped to 1.5% in 2004 and 2005.

Table 10. Hungary military expenditure as % of GDP 1994 – 2003 (From: SIPRI)



When reviewing the military expenditure commitment from the fiscal perspective, it is possible to see that there was a continuous increase of funds from 1998 to 2001, from \$1.21 to \$1.66 billion. After that, military expenditures took a hit, as in 2006 the funding level of \$1.353 billion returned to the funding level of 1997 (\$1.350 billion).

5. Baltic Countries (Latvia, Estonia, Lithuania)

The Baltic countries have always been at the crossroads of interests of major countries in Europe—Russia and Germany in recent memory, Poland and Sweden in previous centuries.

They became independent states for the first time after the collapse of the Russian Empire in 1918. Then the countries enjoyed a brief spell of independence which lasted for 22 years; this period was ended by Soviet occupation in 1940, an occupation that lasted until the USSR's collapse in 1991.

After the collapse of the USSR, Latvia, Estonia and Lithuania sought an international mechanism which would provide them safety and security. All three countries declared membership in NATO and EU to be a primary goal of their foreign policies and planned to join as early as possible.

But it was a long road for the Baltic countries to travel, as 50 years of Soviet occupation had left scars on the economies of the three countries and their readiness to take security related responsibilities in the international area.

In order to make the accession to both organizations harder, Russia stated its opposition to the membership of the three Baltic countries in the EU and NATO (especially NATO); this made the issue of accession not only dependent on the success of the reforms and progress done by the countries, but also on political bargaining and negotiation among Russia, NATO and EU officials at the highest levels.

a. Latvia (2004)

1) Background Information on the Latvian Armed Forces. After the collapse of the Soviet Union in 1991, Latvia had no defense forces; so there was a need to build a new defense system from scratch. This system had its beginnings back in 1991 during the Days of the Barricades (as the Soviet government tried to oppress freedom movements in the Baltic republics with force).

On 24 January 1991, the Public Security Department was established, but the specific defense institutions began to form after the real restoration of independence.⁶⁴ The first step was the establishment of the Ministry of Defense in

⁶⁴ "Latvian Independence Restoration and Establishment of Defense Structures," MoD Latvia website, [http://www.mod.gov.lv/Ministrija/Vesture/Latvijas%20neatkaribas%20atjaunosana%20un%20aizsardzibas%20strukturu%20izveide%20\(1991\).aspx](http://www.mod.gov.lv/Ministrija/Vesture/Latvijas%20neatkaribas%20atjaunosana%20un%20aizsardzibas%20strukturu%20izveide%20(1991).aspx) (accessed May 20, 2008).

November 1991 and development of the first draft structure of the armed forces. At this time other institutions, such as the State Defense Forces, the National Academy of Defense and other entities related to state defense, were subordinated directly to the Ministry of Defense.⁶⁵

Until 1994, the Latvian armed forces totaled 6,600 soldiers, including 1,650 in the army, 630 in the navy, 180 in the air force, and 4,140 in the border guard. Plans called for 9,000 active members in the armed forces. In addition, the security service of the Ministry of Interior and the reserve Home Guard—totaling 17,000 members—served as a national guard and assisted the border guard and the police.⁶⁶

A conscript based system was established where during a 15-year period (until 2007)—40,718 soldiers served in the armed forces. Latvia revised the National Defense Concept in 2003, changing from territorial defense with a conscript base to an all-volunteer force with the main focus on participation in collective defense. The changes in the armed forces were implemented for several reasons:

1. NATO membership and participation of Latvian armed forces in NATO operations
2. A need to improve Latvia's host-nation capabilities
3. Changes in the international situation: there was no need for territorial defense forces and Latvia shifted its focus to developing its force components for NATO forces
4. Allocation of funds: taking into account the opportunity costs of conscript-based armed forces, it was decided to use more efficient, well-equipped professional units

The transition to a fully professional force of approximately 5,000 soldiers was finished in 2007.⁶⁷

⁶⁵ "Latvian Independence Restoration and Establishment of Defense Structures."

⁶⁶ "Latvia, National Security," Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+lv0029\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+lv0029)) (accessed May 20, 2008).

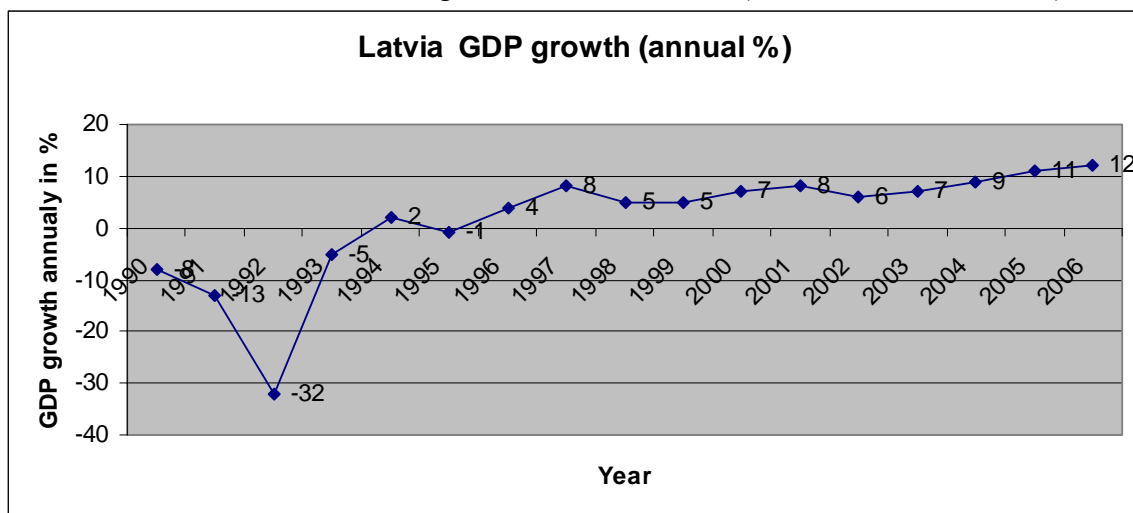
⁶⁷ "Latvian National Armed Forces Structure and Tasks," MoD Latvia website, <http://www.mod.gov.lv/Nacionalie%20brunotie%20speki/NBS%20Struktura.aspx> (accessed May 20, 2008).

2) Spending before NATO. After regaining independence in 1991, Latvia started from scratch. All the Baltic countries were in transition from a planned to a market based economy. Latvia's economy experienced a shift in the import and export direction of goods—the former export market to the USSR collapsed as the import of raw materials from former compatriots was not possible anymore.

After the collapse of the USSR, Latvia's economic growth stopped for four years until 1994, but still Latvia needed to increase spending for military purposes to develop its armed forces.

In 1994, Latvia joined the PfP framework in order to improve its interoperability with NATO forces; the PfP goals served as a roadmap to NATO, Latvia's ultimate security goal.

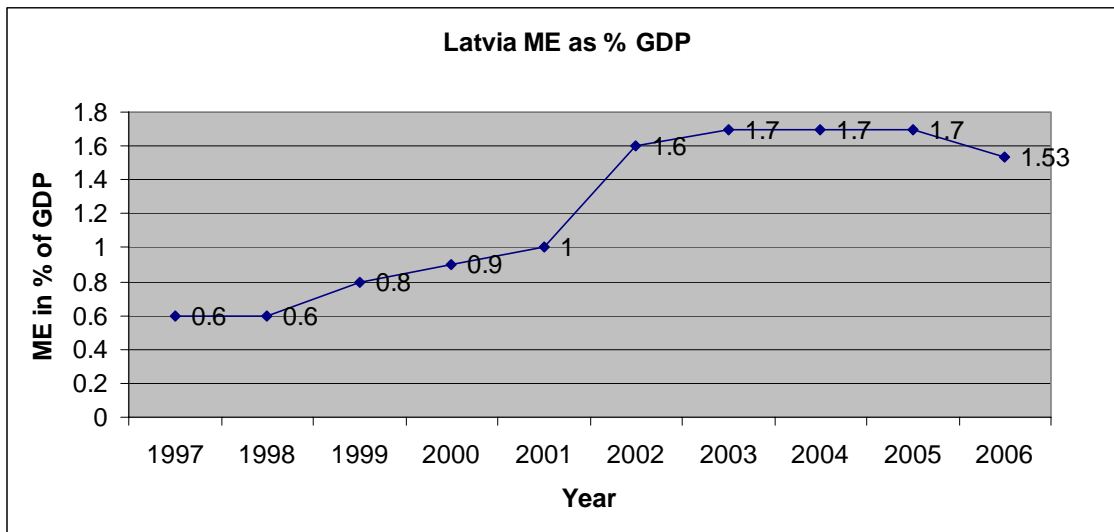
Table 11. Latvia GDP growth % 1990 – 2006 (From: World Bank data)



In order to achieve its goal, Latvia started to increase its military spending in the first years of independence—from \$ 61.7 million in 1993 to \$71.9 million in 1994, according to SIPRI data.

After the accession to the PfP dialogue, Latvia's military expenditure decreased at the start, but then increased gradually after 1996.

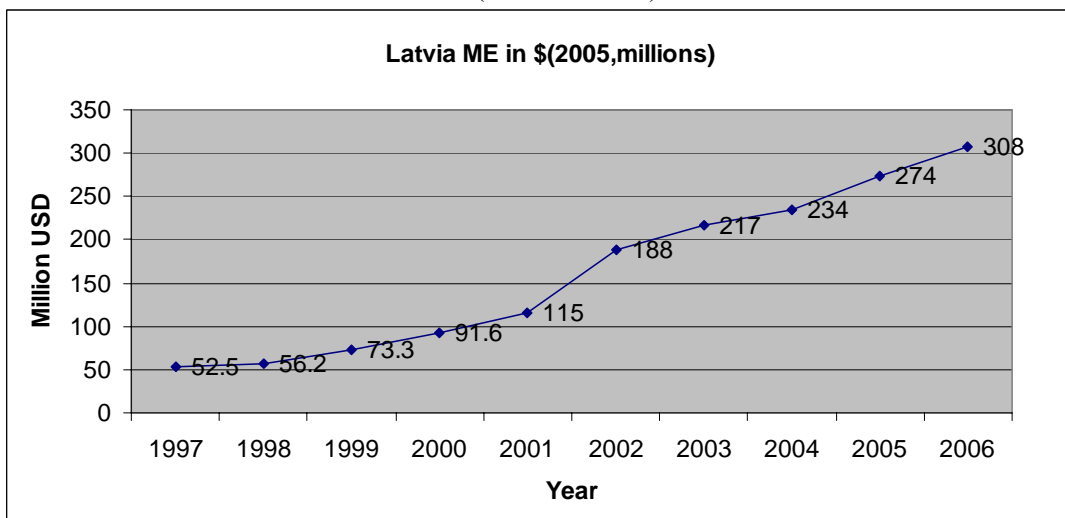
Table 12. Latvia military expenditure as % of GDP 1997 – 2006 (From: SIPRI)



To stress further to NATO its willingness to join after accessing the MAP process in 1999, Latvia drastically increased its spending after 2000, from \$91.6 million in 2000 to \$188 million in 2002—an increase of 205%.

Also, in terms of % of GDP, Latvia made a huge jump in 2000, from 0.9% of GDP to 1.6% of GDP in 2002.

Table 13. Latvia, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)



3) Spending after Joining NATO. Until accession to NATO in 2004, Latvia never reached the required commitment of 2% of GDP for military expenditures, as can be seen from SIPRI data. Latvia came closest to the 2% hurdle in 2003, 2004 and 2005, spending 1.7% of GDP for military purposes, but as GDP growth for the same years was substantial in terms of fiscal growth the numbers look better: \$217 million in 2003, \$234 million in 2004 (Latvia's accession year to NATO) and \$274 million in 2005.

Latvia continues to increase its spending for military purposes, reaching \$308 million in 2007.

b. Estonia (2004)

1) Background Information on the Armed Forces of Estonia. Estonia mirrored the other post-USSR Baltic countries in the need to rebuild its armed forces from scratch. The government took swift measures to build up its defense forces, so much so that already by 1994 the Estonian Defense Forces numbered about 3,000 (including a 2,500-member army and a 500-member navy).

There was also a 6,000-member reserve militia, known as the Defense League (Kaitseliit); a 2,000-member paramilitary border guard under the command of the Ministry of Interior; and a maritime border guard, which also functioned as a coast guard.⁶⁸

To further stress the importance of national defense, the Estonian parliament in March 1994 adopted a law mandating 8-12 months of military service for all male citizens aged 19-27 years.

In 2006, Estonia reported to NATO armed forces strength of 5,000 military personnel,⁶⁹ but currently the average size of the Estonian Regular Armed Forces in peacetime is about 3,800 (Army 3,300, Navy 300, and Air Force 200) persons, of

⁶⁸ "Estonia, National Security," Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+ee0027\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+ee0027)) (accessed May 20, 2008).

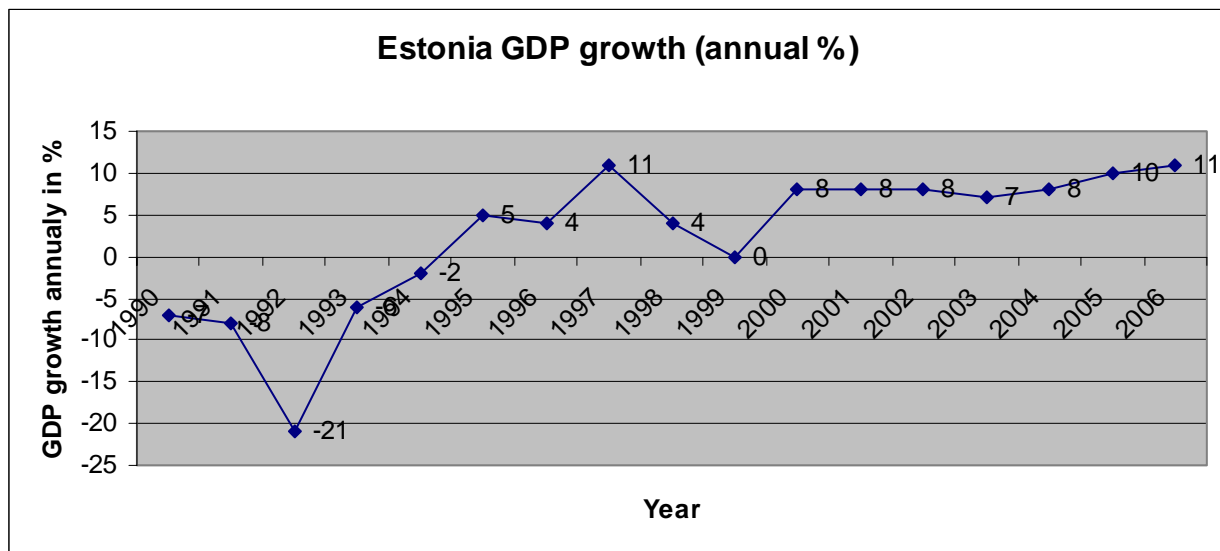
⁶⁹ "NATO – Russia Compendium of Financial and Economic Data Relating to Defense for 2006," NATO website, <http://www.nato.int/docu/pr/2006/p06-159.pdf> (accessed May 20, 2008).

whom about 1,500 are conscripts. The Voluntary Defense League also has about 8,000 members. The planned size of the operational (wartime) structure is 16,000 personnel.⁷⁰

2) Spending before NATO. Estonia spent \$36.7 million on its military in 1992, in order to start up the rebuilding of the Estonian Defense Forces.

As with other former Soviet bloc countries, Estonia faced big budgetary constraints on increasing military expenditure during the first five years of independence, as only in 1995 did its economy finally start to grow.

Table 14. Estonia, GDP growth % 1990 – 2006 (From: World Bank data)

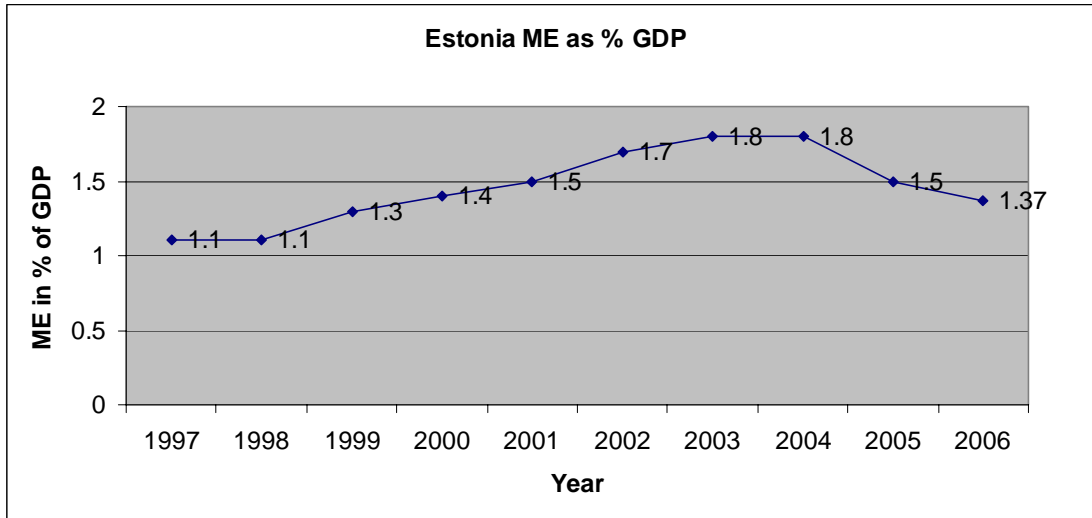


Estonia joined PfP in 1994, and thereby gaining specific partnership goals which needed to be accomplished before talks on possible NATO membership could start.

Starting from 1994, Estonia spent more than 1% of GDP on military expenditures, but as with Latvia and Lithuania never committed to spend 2% of GDP on military expenditure—the closest it came was in the years 2003 and 2004 (Estonia’s year of accession to NATO) when military expenditures reached 1.8% of GDP.

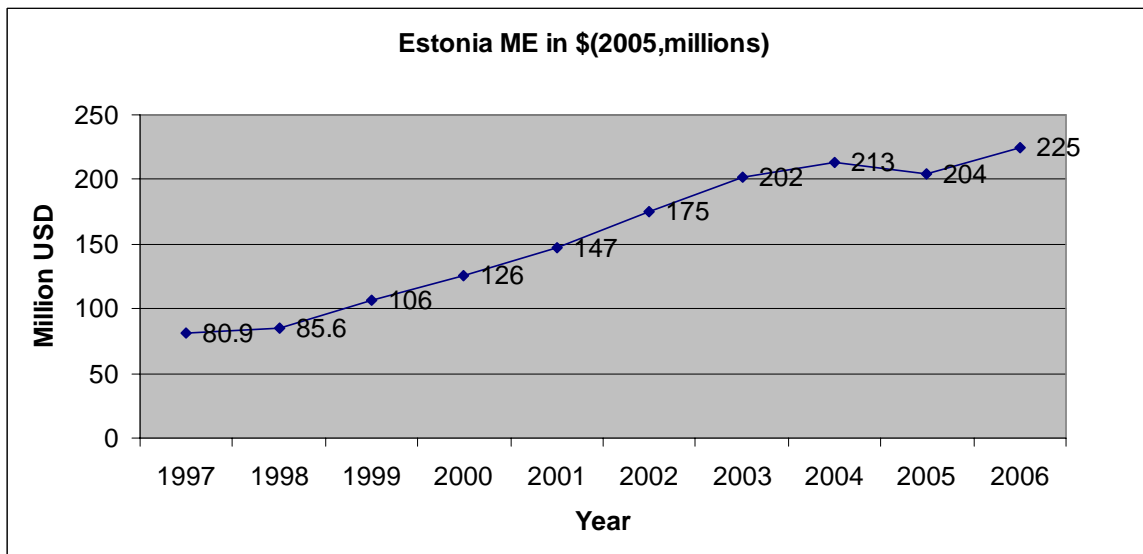
⁷⁰ “What are the Estonian Defense Forces,” Estonian MoD website, http://www.mil.ee/index_eng.php (accessed May 20, 2008).

Table 15. Estonia military expenditure as % of GDP 1997 – 2006 (From: SIPRI)



But in analyzing military spending in fiscal terms, it is possible to see that the budget grew gradually since 1995, topped \$200 million in 2003 and has remained over \$200 million since.

Table 16. Estonia, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)



3) Spending after Joining NATO. After entering NATO in 2004, Estonia decreased spending for military expenditures from 1.8% to 1.5% of GDP, which was also reflected in fiscal terms (from \$213 million in 2003 to \$204 million in 2004).

c. Lithuania (2004)

1) Background Information on the Armed Forces of Lithuania. After restoration of independence on 11 March 1990, one of the major priorities of the Lithuanian government was re-establishment of the armed forces as Soviet army forces deployed in Lithuania (approx. 34,600 troops)⁷¹ withdrew. This first step was accomplished by 31 August 1993.

Lithuania, as the biggest of the Baltic countries, had more resources available to develop its armed forces during the 1990s. Nonetheless, it struggled to increase defense spending due to economic recession.

Still, Lithuania was able to field a force numbering about 8,900; including (as of 1994) a 4,300-member army, 350-member navy, 250-member air force, and 4,000-member border guard. A coast guard, modeled on the United States Coast Guard, was also established. Additionally, there was a 12,000-member Home Guard force⁷² (similar to the volunteer formations in other Baltic countries).

Since then, the Lithuanian Armed Forces have gradually developed; currently, Lithuania still has a conscript-based armed force consisting of 11,000 personnel,⁷³ of which the core is the 'Iron Wolf' Mechanized Infantry Brigade.⁷⁴ These numbers place it first in military size among the Baltic countries.

⁷¹ "History of the Lithuanian Armed Forces," Ministry of National Defense of Lithuania website, http://www.kam.lt/armed_forces/history/ (accessed May 20, 2008).

⁷² "Lithuania, National Security," Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+lt0028\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+lt0028)) (accessed May 20, 2008).

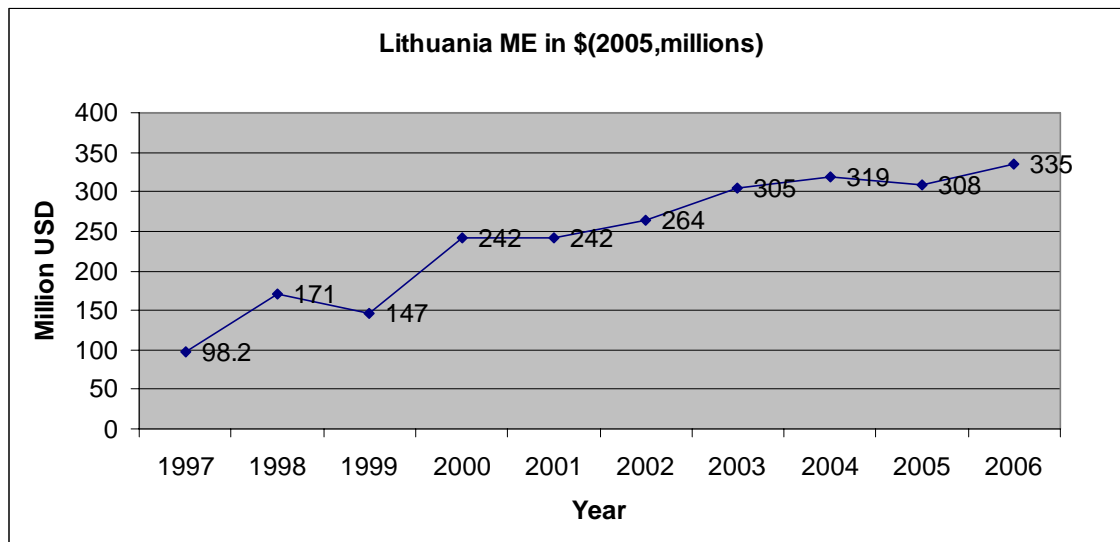
⁷³ "NATO – Russia Compendium of Financial and Economic Data Relating to Defense for 2006."

⁷⁴ "Lithuanian Armed Forces," Ministry of National Defense of Lithuania website, http://www.kam.lt/armed_forces (accessed May 20, 2008).

2) Spending before NATO. As the biggest Baltic country Lithuania also spent the most in the early 90's - \$90.6 million in 1993, but the spending dropped after 1993 to \$48.9 million in 1994.

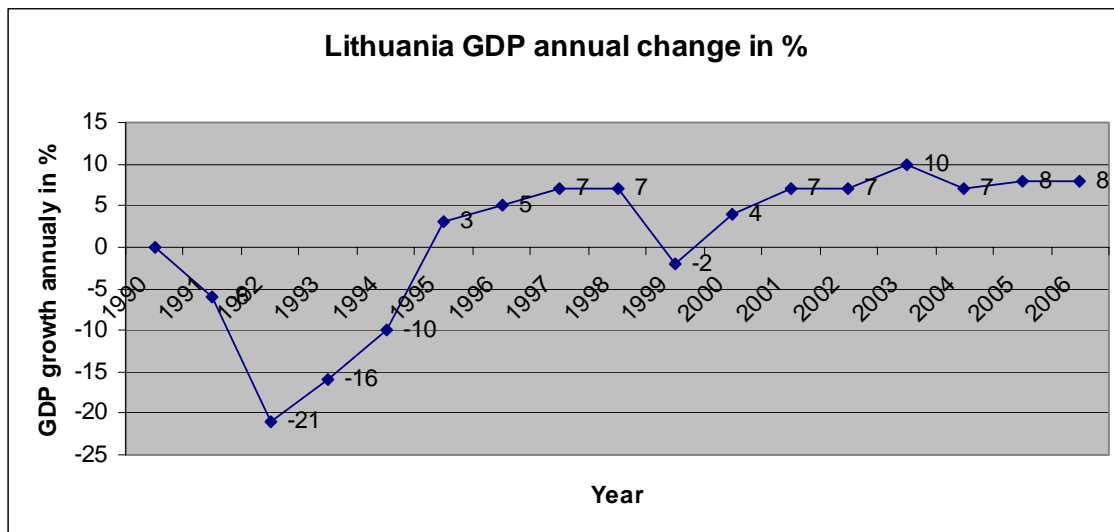
After Lithuania joined the PfP program in 1994 the amount allocated for defense purposes increased steadily afterwards and reached almost \$ 100 million in 1997 – \$98.2 million.

Table 17. Lithuania, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)



Lithuania faced the same economic restraints as Latvia and Estonia; its GDP dropped drastically after 1990 and only started to grow after 1995.

Table 18. Lithuania, GDP growth % 1990 – 2006 (From: World Bank data)

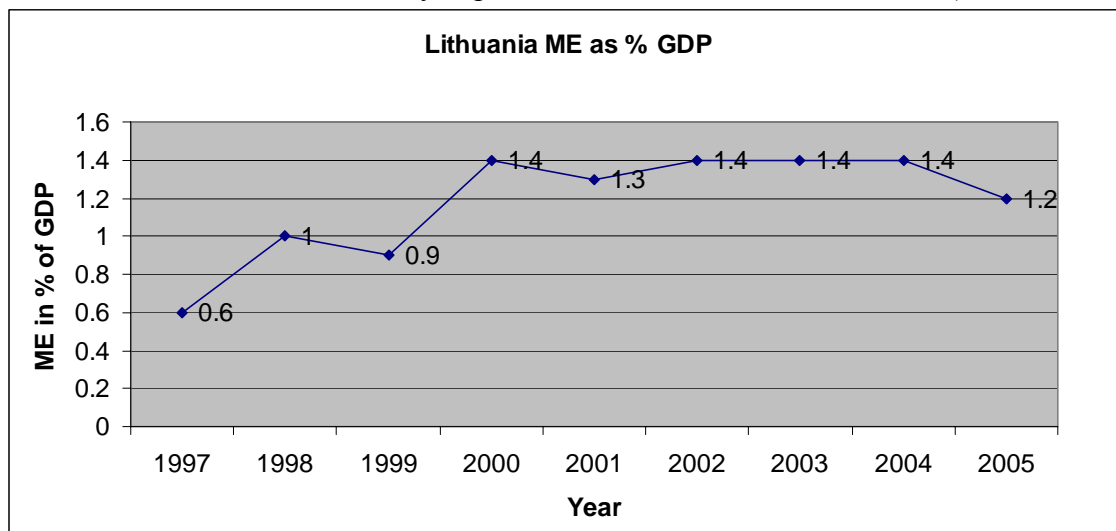


After joining the MAP process in 1999, Lithuania increased its military expenditure even further. It increased from \$147 million to \$242 million from 1999 to 2000—an increase of 60.7%. In terms of GDP, military expenditures rose from 0.9% to 1.4%.

However, until 2004, when the Baltic countries joined NATO, Lithuania's highest commitment in terms of percent of GDP spent on military expenditures was 1.4% for the years 2002, 2003 and 2004.

3) Spending after Joining NATO. After accession to NATO, Lithuania decreased its military spending to 1.2% of GDP; this was also a decrease in fiscal terms, from \$319 million in 2004 to \$308 million in 2005.

Table 19. Lithuania, military expenditure as % of GDP 1997 – 2006 (From: SIPRI)



6. Albania (Joins NATO 2009)

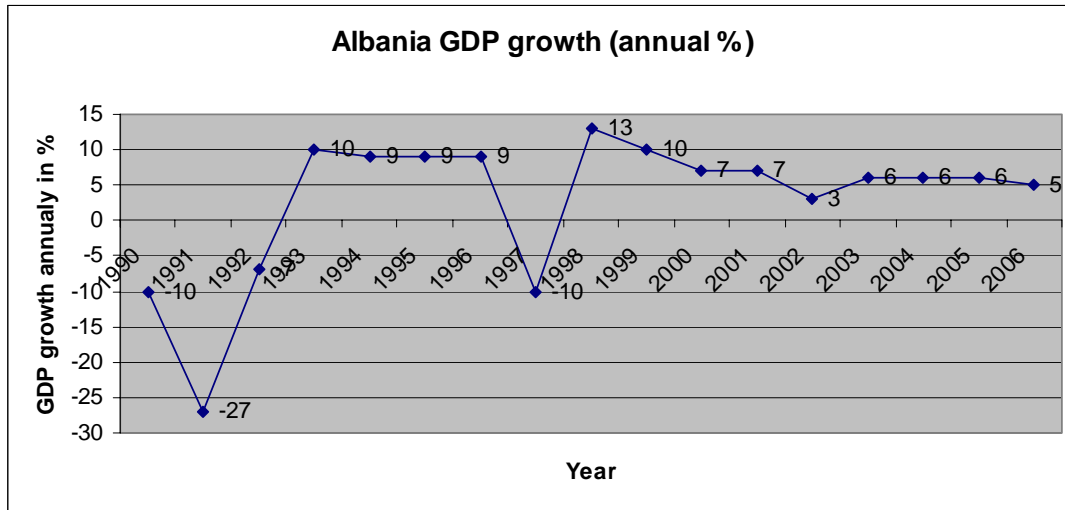
In its short history Albania experienced several ups and downs—the country declared independence from the Ottoman Empire in 1912, but was re-conquered in 1939 by Italy. Later, it was taken over by communist partisans in 1944 and became a member of the Eastern bloc after that.

Once established, Albania's governing communist regime was very xenophobic. It allied first with the USSR (until 1960, when Albania left the Warsaw Pact), and thereafter with China (until 1978).

Albania finally opened to other countries in the 1990s and started a transition to a democratic society, but the transformation was a hard one as successive governments have tried to deal with high unemployment, widespread corruption, powerful organized crime networks, and combative political opponents.⁷⁵

⁷⁵ "Albania Fact Book," CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/al.html> (accessed May 20, 2008).

Table 20. Albania, GDP growth % 1990 – 2006 (From: World Bank data)



Albania first requested to join NATO in 1992, immediately after the country's first multiparty elections, and since then continued to develop and expand relations with NATO member countries.

Albania stayed mostly neutral during the Yugoslavian wars in the Balkans in the 1990s, though Albanian forces did join the NATO-led SFOR peacekeeping force in Bosnia and Herzegovina in 1996. The cooperation with NATO went further in 1999, when NATO established a logistical base in Tirana to support Allied operations in Kosovo;⁷⁶ in 2002, this was transformed into NATO Headquarters in Tirana.⁷⁷

Albania joined NATO's 'Partnership for Peace Initiative' in February 1994, and is a member of the 'US-Adriatic Charter of Partnership' (signed in Tirana in 2003).⁷⁸ Albania entered MAP in 1999 and was officially invited to join NATO during the Bucharest summit on April 2-4, 2008.⁷⁹

⁷⁶ "NATO's Relations with Albania," NATO website, http://www.nato.int/issues/nato_albania/evolution.html (accessed May 20, 2008).

⁷⁷ "NATO Headquarters Tirana," NATO Headquarters Tirana website, <http://www.afsouth.nato.int/organization/NHQTIRANA/index.htm> (accessed May 20, 2008).

⁷⁸ Milica Delevic, "Regional Cooperation in the Western Balkans," Chaillot Paper no. 104 (Paris: EU Institute for Security Studies, 2007).

⁷⁹ "NATO Decision on Open Door Policy," NATO website, <http://www.nato.int/docu/update/2008/04-april/e0403h.html> (accessed May 20, 2008).

a. *Background Information on the Armed Forces of Albania*

During the years of the Cold War, Albania tried to isolate itself from the rest of the world and relied on its own capabilities to defend itself. In 1992, the total number of the Albanian armed forces was estimated to be 48,000 men, of which 50% were conscripts. The force structure was copied from the Red Army model, with realignment to the Chinese model after 1961.⁸⁰

Albania struggled economically during the 1990s, but continued to sustain high numbers of military personnel due to the Yugoslavian wars raging in neighboring countries. Only in 2002 did the Albanian military launch a ten-year transformation program under the guidance of the U.S. Department of Defense (DOD) to trim down and thoroughly modernize its current standing force of more than 30,000 troops. The Albanian army participates in the peacekeeping missions in Bosnia, Afghanistan and Iraq. The total strength of the armed forces is estimated currently at 21,500.⁸¹

b. *Spending Before NATO*

According to SIPRI, data Albania spent 5.9% of the GDP (\$227 million) on military expenditure in 1990. Due to its very hard transition to a market economy, – that number fell sharply thereafter. For example, when Albania joined PfP in 1994, it spent 2.5% of GDP (\$108 million) – half as much as before. In 1999, when Albania joined MAP, the number was down to 1.2% of GDP (\$69 million)—less than one third the 1990 amount.

PfP and MAP were very helpful to the country in order to assign priorities and better spend its limited funds in order to come closer to NATO membership.

⁸⁰ “Albania, National Security,” Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+al0156\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+al0156)) (accessed May 20, 2008).

⁸¹ “Albania Armed Forces,” The Centre for South East European Studies website, http://www.csees.net/?page=country_section&country_id=1&sec=8 (accessed May 20, 2008).

Albania itself saw its membership in NATO as an opportunity to spread NATO's influence in southeastern Europe. In its MAP, Albania is focusing on the following priorities:

- Continue to improve public order and market economy, giving special attention to the improvement of public order and the fight against corruption
- Encourage and develop respect for human rights, including minority rights
- Strengthen democratic institutions and their role in society. Establish an efficient public administration
- Strengthen civilian democratic control over the armed forces
- Maintain the results achieved in growing the economy and continue economic reforms, particularly in the field of privatization
- Continue "good neighbor" policies—particularly in the context of the situation after Kosovo—making use of regional programs of the Stability Pact
- Adapt legislation to make it more compatible with NATO Standards
- Be fully engaged to guarantee internal control of weapons and disarmament process⁸²

c. Spending in the Last Five Years Before Invitation to Join NATO

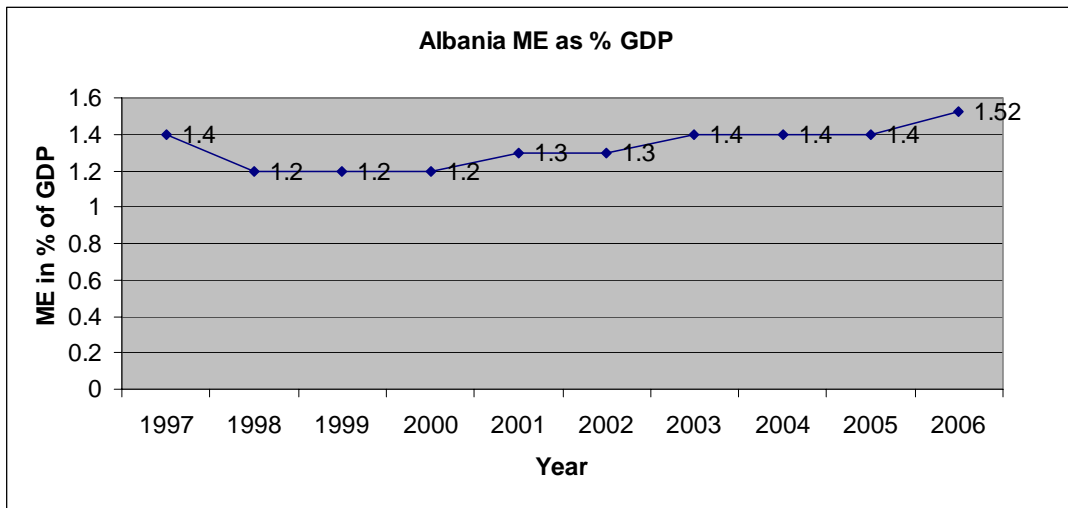
In the last five years, Albania has gradually increased its military expenditure, from 1.2% of GDP in 1999 to 1.52% of GDP in 2006.

The increase in terms of GDP percentage is not significant, but in fiscal terms it is—from \$69 million to \$139 million in 2006.

2006 will be the first year when military expenditure will be higher than spending from the early 1990s (\$129 million or 4.9 % of GDP in 1992).

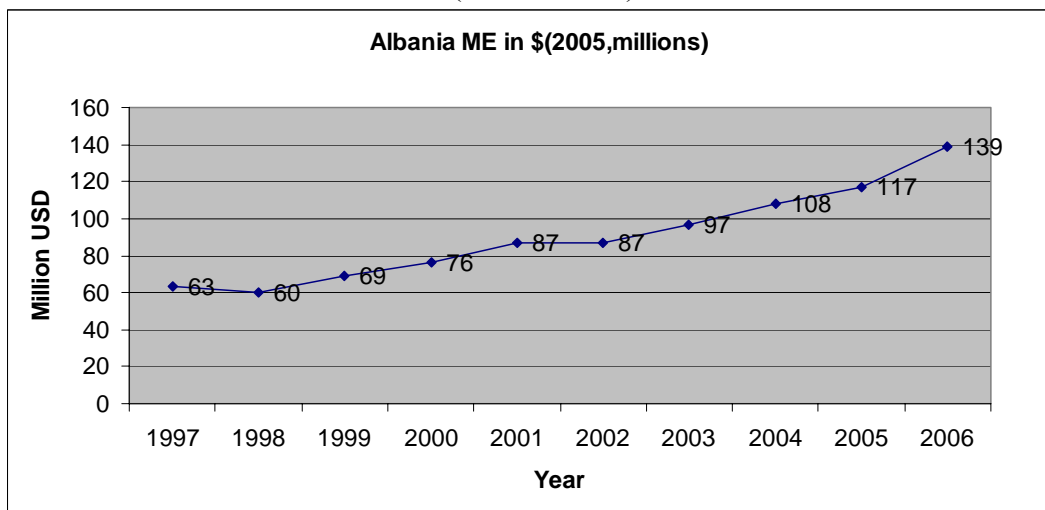
⁸² "Albanian Defense Reform Priorities," Albanian MoD website, <http://www.mod.gov.al/index.php?crd=0,0,0,0,0,1,Lng2> (accessed May 20, 2008).

Table 21. Albania , military expenditure as % of GDP 1997 – 2006 (From: SIPRI)



In addition, the complicated security situation in the Balkans must be taken into account when evaluating Albania's economic development—only since 1998 has Albania's GDP grown in each successive year.

Table 22. Albania, amount of military expenditure in million \$ (2005) 1997 – 2006 (From: SIPRI)



7. Croatia (Joins NATO 2009)

Croatia—like other Balkan countries—has a complicated history in the 20th century. At first, it was part of the Austro-Hungarian Empire until the end of the World

War I; it then became a part of the Yugoslavian kingdom, together with Serbs and Slovenes. After the Second World War, Yugoslavia (including Croatia) became an independent communist country under the Tito regime. This unification lasted into the early 1990s (1991), when Croatia finally declared its independence.

However, the Serbs who lived in Croatia did not want Croatia to part from Yugoslavia and they started a rebellion supported by the Yugoslav People's Army (which was controlled by the Serbs). It took four years for Croatia to win the struggle for its independence, before occupying Serb armies were cleared from the territory of Croatia. Under UN supervision, the last Serb-held enclave in eastern Slavonia was returned to Croatia in 1998.⁸³

After that, Croatia focused on development of its economy, which was heavily damaged during the early 1990s and experienced growth only after 1995. At the same time, Croatia paid attention to the transformation of its armed forces within the frameworks and tools offered by NATO.⁸⁴

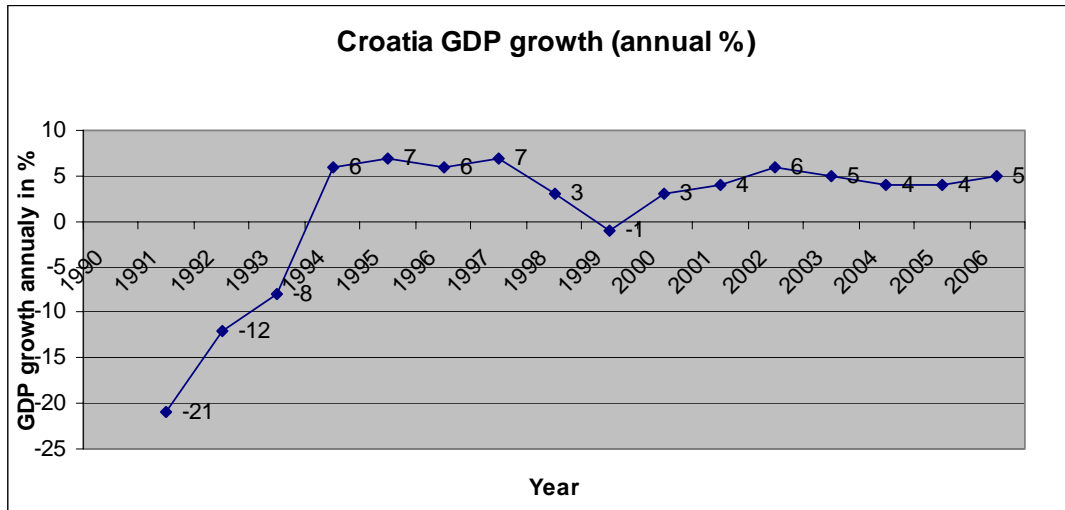
Since declaration of independence, Croatia has established relations with NATO and joined the PfP process in 2000 (after a six-year expanding relationship from 1994) and the MAP process in 2002. Croatia was invited—together with Albania—to join NATO in April 2008.⁸⁵

⁸³ "Croatia Fact Book," CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/hr.html> (accessed May 20, 2008).

⁸⁴ Lionel Beehner, "NATO Looks to Expand Mission and Membership," Council of Foreign Relations website, http://www.cfr.org/publication/11159/nato_looks_to_expand_mission_and_membership.html?breadcrumb=%2Fregion%2F396%2Fnato#7 (accessed May 20, 2008).

⁸⁵ "NATO's Relations with Croatia," NATO website, http://www.nato.int/issues/nato_croatia/index.html (accessed May 20, 2008).

Table 23. Croatia, GDP growth % 1990 – 2006



a. Background Information on the Armed Forces of Croatia

After declaring independence, Croatia needed to establish its armed forces from scratch—and the young country needed them right from the beginning as it fought a four-year war of independence.⁸⁶

In the mid 1990s it was estimated that Croatia had 180,000 men in its armed forces.⁸⁷ By 2002, this number was down to 51,000 active military personnel and 140,000 reserves.⁸⁸

According to the latest plans, the Croatian Armed Forces should be 16,000 (they are currently at 25,000) strong within the NATO framework,⁸⁹ as Croatia has transitioned to a professional military starting from January 1, 2008.

⁸⁶ Davor Bozinovic, “Transforming Society – Croatia’s Way to NATO,” Konrad Adenauer Stiftung website, http://www.kas.de/proj/home/pub/40/16/dokument_id-11948/index.html (accessed May 20, 2008).

⁸⁷ Bozinovic, “Transforming Society – Croatia’s Way to NATO.”

⁸⁸ “Croatian Armed Forces,” Encyclopedia of Nations website, <http://www.nationsencyclopedia.com/Europe/Croatia-ARMED-FORCES.html> (accessed May 20, 2008).

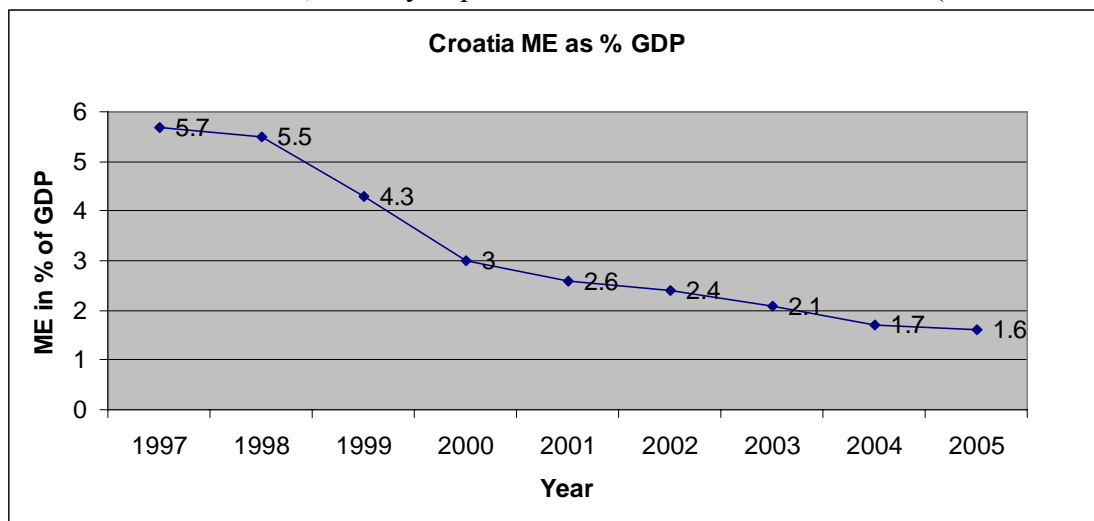
⁸⁹ Bozinovic, “Transforming Society – Croatia’s Way to NATO.”

Croatia has also been contributing to the peacekeeping efforts in Afghanistan since 2003. It also actively cooperates with other Adriatic countries in the military field, including deployment of a joint medical unit (together with Albania and FYROM) to Afghanistan.⁹⁰

b. Spending Before NATO

In the five years before joining the MAP in 2002, Croatia's military expenditure decreased significantly; this can mostly be attributed to the end of the hostilities between Croatia and Serbia. Therefore, Croatia was able to focus more on the development of the economy than on transformation of its armed forces in the PfP and MAP framework.

Table 24. Croatia, military expenditure as % of GDP 1997 – 2006 (From: SIPRI)

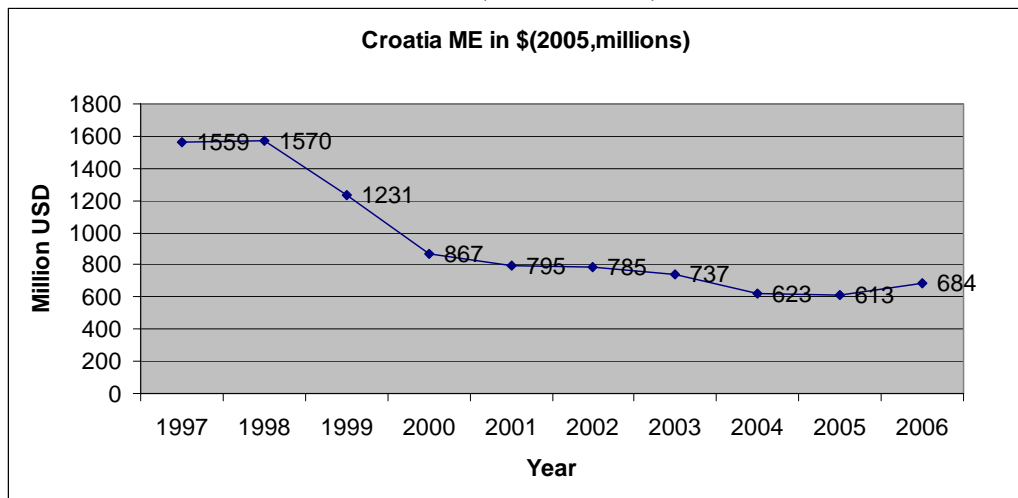


During the war, Croatia spent more than five percent of GDP on military expenditure (as much as 9.4% of GDP in 1995—\$2.24 billion). It then decreased from 5.7% of GDP in 1997 to 2.4% of GDP in 2002, when Croatia joined the MAP process.

⁹⁰ Bozinovic, "Transforming Society – Croatia's Way to NATO."

The military expenditure share of GDP continued to decrease further; according to SIPRI data it was only 1.6% of GDP in 2005. At the same time, military expenditure also decreased in fiscal terms—from \$1.55 billion in 1997 to \$684 million in 2006.

Table 25. Croatia, amount of military expenditure in million \$ (2005) 1997 – 2006
(From: SIPRI)



8. FYROM (Macedonia)

FYROM gained independence from Yugoslavia in 1991 in a peaceful way and mostly was preserved from hostilities during the 1990s (unlike the other former Yugoslavian republics).

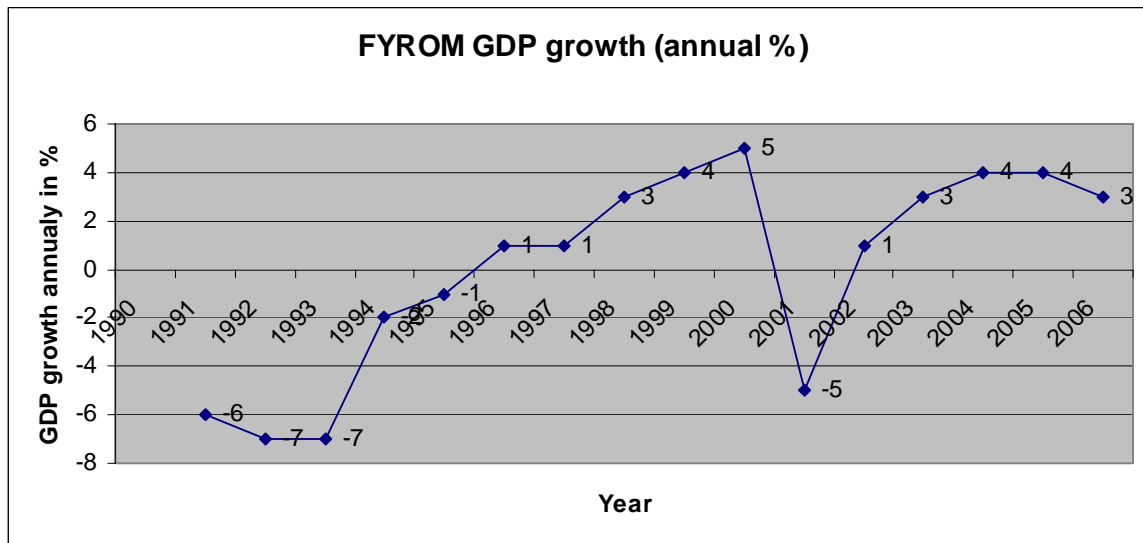
Therefore, FYROM's economy was not damaged as much as the economies of other countries during the early 1990s, suffering only one-digit decreases in the GDP in each successive year. It showed a steady rate of growth in the mid 1990s, then noted a steady decline in 2001 (probably caused by the insurgency in the country).

This was the biggest challenge to the young country, when the Albanian minority in the country started an insurgency in order to have equal rights with the Macedonians. NATO needed to step in and end the fighting.⁹¹

⁹¹ "FYROM Fact Book," CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/mk.html> (accessed May 20, 2008).

Another controversy is that Greece refuses to recognize the country under its current official name (the U.S. has referred to the country as the Republic of Macedonia since 2004);⁹² these tensions prevented the country receiving an invitation to join NATO together with Croatia and Albania in April 2008.⁹³

Table 26. FYROM, GDP growth % 1991 – 2006



a. Background Information on the Armed Forces of FYROM

When FYROM declared its independence in 1991, its armed forces consisted simply of local militia and old equipment left by the Yugoslav People's Army. In 1992, the Armed Forces of the Macedonian Republic were formed.

FYROM was not involved in the Yugoslav wars in the 1990s, and therefore the build up of the armed forces was slower than in other former Yugoslavian republics.

⁹² "FYROM Fact Book."

⁹³ "Greece Refuses FYROM's NATO Accession Bid," Embassy of Greece in U.S. website, <http://www.greekembassy.org/Embassy/content/en/Article.aspx?office=1&folder=19&article=23096> (accessed May 20, 2008).

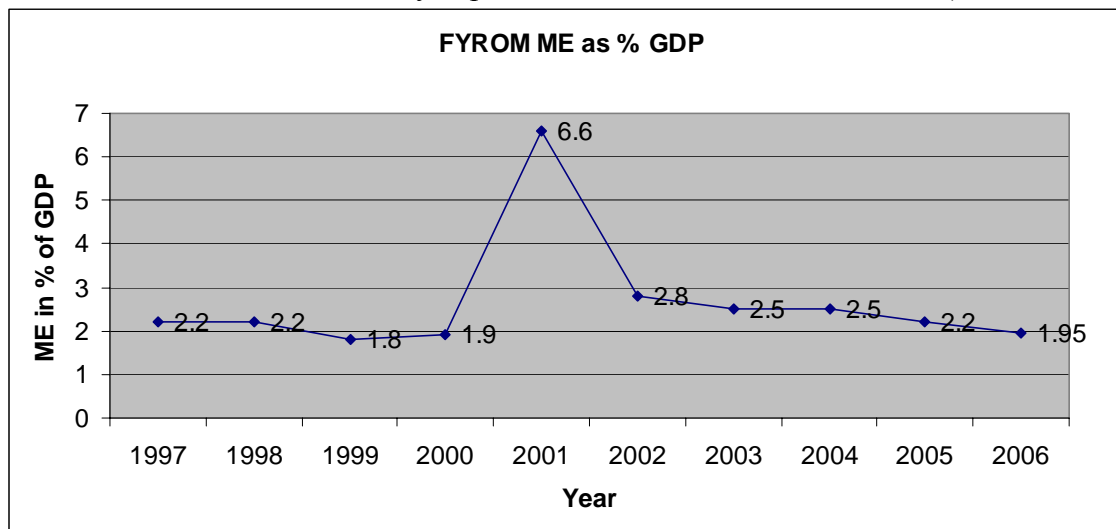
Under the last reforms in the Ministry of Defense and the armed forces, the total military strength is 12,858 soldiers, of whom 70% are professional soldiers.⁹⁴

b. Military Expenditure in the Last Ten Years

As mentioned before, FYROM has not experienced the same problems (military hostilities) as its neighboring countries, except for an insurgency in 2001.

Therefore, the country was able to gradually increase its military spending during the late 1990s—especially when FYROM joined the MAP process in 1999. Since then, military expenditure has slowly increased, as FYROM has declared NATO membership to be one of the country’s foreign policy priorities.

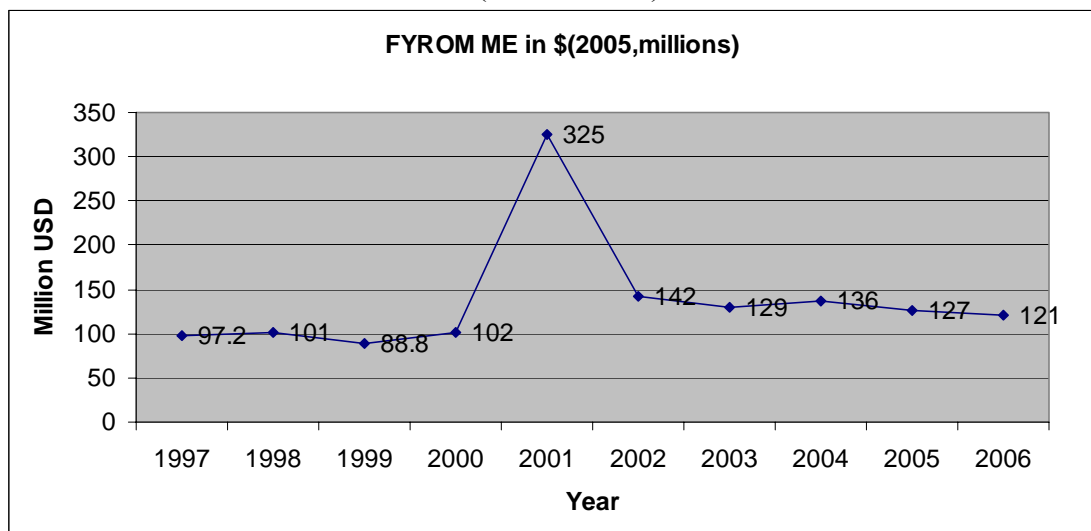
Table 27. FYROM, military expenditure as % of GDP 1997 – 2006 (From: SIPRI)



In fiscal terms, spending was and is relatively small compared to other new NATO member countries; FYROM spent \$63 million on its military in 1997 and topped the \$100 million mark in 2004.

⁹⁴ “Organization of Armed Forces,” Ministry of Defense FYROM website, <http://www.morm.gov.mk:8080/morm/en/ARM/Organization.html> (accessed May 20, 2008).

Table 28. FYROM, amount of military expenditure in million \$ (2005) 1997 – 2006
(From: SIPRI)



9. Summary

Some basic conclusions can be drawn and attributed to all countries which wanted to enter NATO after the end of the Cold War:

- All needed to modernize and develop their militaries
- Modernization and development efforts of the armed forces were hampered by economic decline at the start of the 1990s, as countries underwent a transition from planned to market economies

The following conclusions relate to specific country groups:

a. Countries Independent Prior to 1990

- Countries that had larger armed forces and were independent during the Cold War (Poland, Czech Republic, Hungary, and Albania) drastically decreased military expenditure in the early-to-mid 1990s.
- Increased military spending at latter stages was due to the need to meet NATO requirements
- Once accepted and entered into NATO, military expenditure decreased (except Albania, as it will join the Alliance only in 2009)

b. Baltic Countries

- After regaining independence in 1990, the Baltic countries started to increase their military spending gradually
- After the invitation to join NATO was received and countries joined NATO, they stopped increasing their military spending, and even decreased it

c. Adriatic Countries (Croatia, FYROM, except Albania)

- Both countries spent significant amounts of GDP on development of the armed forces in the early 1990s, as they were involved in hostilities with their former Yugoslavian compatriots or had ethnic insurgencies within their territories
- After the end of hostilities, military expenditures were cut drastically, and fell way below 2% of GDP mark for Croatia

THIS PAGE INTENTIONALLY LEFT BLANK

VII. ANALYSIS

A. GDP COMPARISONS

In order to analyze the budgetary behavior of the three accession wave countries, it will first be determined if any common trends exist in the economic development of each of these country groups which joined NATO at different times: the Visegrad countries⁹⁵ (Poland, Czech Republic and Hungary) in 1999, Baltic countries (Latvia, Estonia and Lithuania) in 2004 and Adriatic countries (Albania, Croatia and FYROM⁹⁶) which are part of the third prospective enlargement wave.

1. Visegrad Countries

As mentioned in the previous chapter, all three countries share a similar history; all three came into the Soviet sphere of influence after World War II and only in the 1990s started their long road toward market economies and democracy. Therefore, as mentioned before, economic growth of the countries was slow in the early to mid 1990s.

As can be seen, the correlation coefficient is over 0.7, which means that the economic development of the countries can be characterized as having a strong positive relationship; they are all neighboring (regionally) countries, with the same economic challenges. As such, it is no surprise that they show common economic development patterns.

⁹⁵ “Visegrad Group,” Visegrad group website, <http://www.visegradgroup.eu/main.php?folderID=925>, (accessed May 20, 2008).

⁹⁶ FYROM was not invited to join NATO in 2009.

Table 29. Visegrad countries GDP growth (annual %) (From: World Bank)

	Czech growth (annual %)	Republic GDP growth (annual %)	Hungary growth (annual %)	GDP growth (annual %)	Poland GDP growth (annual %)
1990		...		-3	...
1991		-12		-12	-7
1992		-1		-3	3
1993		0		-1	4
1994		2		3	5
1995		6		1	7
1996		4		1	6
1997		-1		5	7
1998		-1		5	5
1999		1		4	5
2000		4		5	4
2001		2		4	1
2002		2		4	1
2003		4		4	4
2004		5		5	5
2005		6		4	4
2006		6		4	6

* - no data on 1990 GDP growth (annual %) for Czech Republic and Poland

Table 30. Correlation analysis of Visegrad country GDP growth (annual %)

			Czech Republic GDP growth (annual %)	Hungary GDP growth (annual %)	Poland GDP growth (annual %)
Czech growth (annual %)	Republic GDP		1		
Hungary (annual %)	GDP	growth	0.77	1	
Poland (annual %)	GDP	growth	0.76	0.74	1

2. Baltic Countries

As with the Visegrad countries, the Baltic countries share a similar historical background and faced the same difficulties in the 1990s. Therefore, it is possible to see that all countries experienced similar economic development problems.

Table 31. Baltic countries GDP growth (annual %) (From: World Bank)

	Latvia GDP growth (annual %)	Estonia GDP growth (annual %)	Lithuania GDP growth (annual %)
1990	-8	-7	...
1991	-13	-8	-6
1992	-32	-21	-21
1993	-5	-6	-16
1994	2	-2	-10
1995	-1	5	3
1996	4	4	5
1997	8	11	7
1998	5	4	7
1999	5	0	-2
2000	7	8	4
2001	8	8	7
2002	6	8	7
2003	7	7	10
2004	9	8	7
2005	11	10	8
2006	12	11	8

* - no data on 1990 GDP growth (annual %) for Lithuania

When conducting the correlation analysis, it is possible to see that the economic development of the Baltic countries is even more closely linked than the economic development of the Visegrad countries, with a positive correlation coefficient ranging from 0.83 to 0.95.

Table 32. Correlation analysis of Baltic country GDP growth (annual %)

	Latvia GDP growth (annual %)	Estonia GDP growth (annual %)	Lithuania GDP growth (annual %)
Latvia GDP growth (annual %)	1		
Estonia GDP growth (annual %)	0.95	1	
Lithuania GDP growth (annual %)	0.84	0.93	1

3. Adriatic Countries

As with the previous groups, these countries share a similar past and traveled the same road to market economy and democracy, but there are several unknown factors in

this comparison—isolationist politics of Albania, Yugoslavian war factors—which could cause a lower linear relationship among these countries.

Table 33. Adriatic countries GDP growth (annual %) (From: World Bank)

	Albania GDP growth (annual %)	FYROM GDP growth (annual %)	Croatia GDP growth (annual %)
1990	-10
1991	-27	-6	-21
1992	-7	-7	-12
1993	10	-7	-8
1994	9	-2	6
1995	9	-1	7
1996	9	1	6
1997	-10	1	7
1998	13	3	3
1999	10	4	-1
2000	7	5	3
2001	7	-5	4
2002	3	1	6
2003	6	3	5
2004	6	4	4
2005	6	4	4
2006	5	3	5

* - no data on 1990 GDP growth (annual %) for FYROM and Croatia

Therefore, there are no big surprises that the economic development differences for the countries are bigger; the relationship among the countries' development is still positive, but much weaker than among the Visegrad and Baltic countries (only from 0.42 to 0.66).

Table 34. Correlation analysis of Adriatic country GDP growth (annual %)

	Albania GDP growth (annual %)	FYROM GDP growth (annual %)	Croatia GDP growth (annual %)
Albania GDP growth (annual %)	1		
FYROM GDP growth (annual %)	0.43	1	
Croatia GDP growth (annual %)	0.67	0.65	1

4. Comparison of All Three Enlargement Country Groups' Economic Development

In order to compare all three groups of new NATO members as aspirant countries, averages per country group per year were used in order to determine if there was a linear relationship among these three country groups (taking into account that all countries were in the Soviet sphere of influence and faced similar challenges economically, or any other variables which limit the relationship among these countries).

As can be seen from the data, the correlation coefficient is ranging from 0.62 to 0.93 positive, meaning that there is a medium to strong positive linear relationship between the economic development from 1990–2006 (in terms of annual GDP growth among these three country groups). Hence, the countries had similar economic circumstances in which they needed to balance their military expenditures (ME) with other necessities—the classic “butter or guns” problem.

Table 35. Visegrad, Baltic and Adriatic countries GDP growth (annual % on average)

	Visegrad GDP (annual (Average)	countries growth (%)	Adriatic GDP (annual (Average)	countries growth (%)	Baltic GDP (annual (Average)	countries growth (%)
1990		-3.0		-10.0		-7.5
1991		-10.3		-18.0		-9.0
1992		-0.3		-8.7		-24.7
1993		1.0		-1.7		-9.0
1994		3.3		4.3		-3.3
1995		4.7		5.0		2.3
1996		3.7		5.3		4.3
1997		3.7		-0.7		8.7
1998		3.0		6.3		5.3
1999		3.3		4.3		1.0
2000		4.3		5.0		6.3
2001		2.3		2.0		7.7
2002		2.3		3.3		7.0
2003		4.0		4.7		8.0
2004		5.0		4.7		8.0
2005		4.7		4.7		9.7
2006		5.3		4.3		10.3

Table 36. Correlation analysis of Visegrad, Adriatic and Baltic country GDP growth (annual % in average)

	<i>Visegrad countries GDP growth (annual %) (Average)</i>	<i>Adriatic countries GDP growth (annual %) (Average)</i>	<i>Baltic countries GDP growth (annual % (Average)</i>
Visegrad countries GDP growth (annual %) (Average)	1		
Adriatic countries GDP growth (annual %) (Average)	0.94	1	
Baltic countries GDP growth (annual %) (Average)	0.62	0.71	1

B. MILITARY EXPENDITURE (ME) AS % OF GDP COMPARISON FIVE YEARS PRIOR AND AFTER NATO ENTRANCE

The second part of this analysis determines if there are any linear relationships in military expenditure among those three country groups internally, and then cross compares all three groups in order to identify any general trends among these countries five years prior to NATO accession/invitation to join NATO.

It is assumed that there should be a common trend among these countries internally, as NATO membership is a prime foreign policy and military priority for all of these countries.

The five year comparison period is chosen because of the fact that the Visegrad countries joined PfP five years prior to accession to NATO (at that time, PfP was the major tool in order to synchronize aspirant countries to NATO requirements), the Baltic countries joined MAP five years prior to accession (MAP was specially established in order to accommodate the accession process of aspirant countries to NATO), and it would be impossible to use military expenditure data for a longer period in order to see similarities among countries.

1. Visegrad Countries

In analyzing the Visegrad countries, it is possible to observe that only Poland and the Czech Republic sustain a commitment to ME at almost 2% of the GDP for most of the time. For example, Poland reached its maximum commitment in 1998 (one year prior to NATO) and after that never spent more than 1.9% of GDP on ME.

Hungary only spent more than 2% of GDP on ME in 1994, and decreased its commitment until 1999; since then, Hungary has devoted more each year to ME. The Czech Republic also reached its highest ME contribution in 1999, but still continued to commit almost 2% of GDP to ME.

Table 37. Visegrad countries ME as %of GDP (From: SIPRI)

	Poland ME % of GDP	Hungary ME % of GDP	Czech Republic ME % of GDP
1994	2.4	2.1	2.3
1995	2	1.6	1.9
1996	2	1.5	1.8
1997	2	1.7	1.7
1998	2	1.5	1.9
1999	1.9	1.7	2
2000	1.8	1.7	2
2001	1.9	1.8	1.9

When looking at the Visegrad country group in general, it is possible to see that there is a medium-strong positive correlation among the countries concerning ME.

Table 38. Correlation analysis of Visegrad country ME as % of GDP

	Poland ME % of GDP	Hungary ME % of GDP	Czech Republic ME % of GDP
Poland ME % of GDP	1		
Hungary ME % of GDP	0.63	1	
Czech Republic ME % of GDP	0.59	0.75	1

2. Baltic Countries

The Baltic countries started their official accession in 1999 when they joined the MAP process. From the data, it is possible to observe that Baltic country ME share as percentage of GDP increased gradually and peaked in 2004, which was the year when all three countries joined NATO. After that, it is possible to note a decline in the ME commitment in all three countries.

Table 39. Baltic countries ME as % of GDP (From: SIPRI)

	Latvia ME % of GDP	Estonia ME % of GDP	Lithuania ME % of GDP
1999	0.8	1.3	0.9
2000	0.9	1.4	1.4
2001	1	1.5	1.3
2002	1.6	1.7	1.4
2003	1.7	1.8	1.4
2004	1.7	1.8	1.4
2005	1.7	1.5	1.2
2006	1.53	1.37	1.12

Analyzing the linear relationships in ME as % of GDP among the Baltic countries, it can be seen that there is a weak to strong positive relationship of ME as percentage of GDP among all three countries (from 0.41 to 0.71).

Table 40. Correlation analysis of Baltic country ME as % of GDP

	<i>Latvia ME % of GDP</i>	<i>Estonia ME % of GDP</i>	<i>Lithuania ME % of GDP</i>
Latvia ME % of GDP	1		
Estonia ME % of GDP	0.71	1	
Lithuania ME % of GDP	0.41	0.74	1

3. Adriatic Countries

The Adriatic countries in this comparison form the least homogeneous group. Albania (joined the MAP process in 2002) was an independent country prior to 1990; on the other hand Croatia (joined PfP in 2000) fought a four-year war of independence versus Serbia from 1991 to 1994.

Also, the economic backgrounds of the countries were different, as Albania only recently (from 1990) opened itself to other countries.

When comparing these three countries, of which two (Croatia and Albania) were invited to join NATO next year, it is possible to see differences in ME. For example, at the end of 1990s Croatia was decreasing its armed forces, but FYROM (joined MAP in 1999) started to build them and coped with an insurgency in the country in 2001.

Table 41. Adriatic countries ME as % of GDP (From: SIPRI)

	Albania ME % of GDP	Croatia ME % of GDP	FYROM ME % of GDP
1999	1.2	4.3	1.8
2000	1.2	3.0	1.9
2001	1.3	2.6	6.6
2002	1.3	2.4	2.8
2003	1.4	2.1	2.5
2004	1.4	1.7	2.5
2005	1.4	1.6	2.2
2006	1.5	1.6	1.95

Therefore, it is no surprise that there is no positive linear relationship among these countries in military trends—the data is widely scattered.

Table 42. Correlation analysis of Adriatic country ME as % of GDP

	Albania ME % of GDP	Croatia ME % of GDP	FYROM ME % of GDP
Albania ME % of GDP	1		
Croatia ME % of GDP	-0.86	1	
FYROM ME % of GDP	-0.09	-0.02	1

4. Comparison of All Three Enlargement Groups' Commitment to Military Expenditures in Terms of % of GDP

The first aspect of this data which draws attention is the gradual ME decrease trend among all countries after they enter NATO (an exception is the Visegrad countries,

but they still do not reach the ME level of 2% of GDP) which is an informal NATO requirement to the NATO member countries.⁹⁷

Table 43. Adriatic, Visegrad and Baltic countries Average ME as % of GDP

Adriatic countries average ME % of GDP	Visegrad countries average ME % of GDP	Baltic countries average ME % of GDP
2.4	2.27	1.00
2.0	1.83	1.23
3.5	1.77	1.27
2.2	1.80	1.57
2.0	1.80	1.63
1.9	1.87	1.63
1.7	1.83	1.47
1.7	1.87	1.34

Evaluating any linear relationship among these country groups, it is determined that there is no positive correlation among these country groups on ME in the last decade.

Table 44. Correlation analysis of Visegrad, Adriatic and Baltic country ME in average as % of GDP

	<i>Adriatic countries average ME % of GDP</i>	<i>Visegrad countries average ME % of GDP</i>	<i>Baltic countries average ME % of GDP</i>
Adriatic countries average ME % of GDP	1		
Visegrad countries average ME % of GDP	0.003	1	
Baltic countries average ME % of GDP	-0.40	-0.67	1

As mentioned before, the data shows an alarming trend—two out of three country groups in the sample period showed a decrease of commitment to ME after accession/invitation to NATO.

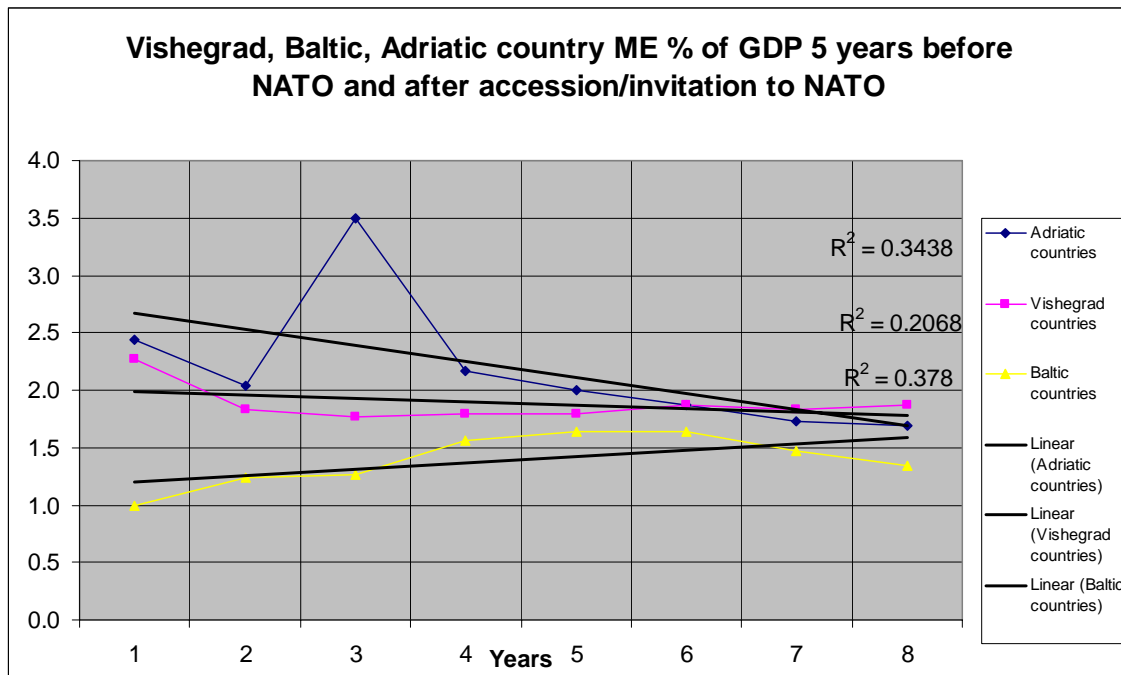
It could be attributed to the fact that they feel safe already in NATO (Baltic countries) or are close to becoming members of the largest military alliance in the world (Adriatic countries).

⁹⁷ Carl Ek, "NATO's Prague Capability Commitment," Federation of American Scientists website, <http://www.fas.org/sgp/crs/row/RS21659.pdf> (accessed May 20, 2008).

Other reasons could be that the countries that joined NATO or are close to joining the alliance are in the later stages of (or have finished) defense reforms; this allows for achievement of the same level of security as before, but with lesser funds.

Still, the most significant fact is that none of the country groups in the test sample showed an increase of ME up to and over the NATO informal requirement of 2% of GDP.

Table 45. Visegrad, Baltic and Adriatic country ME as % of GDP 5 years before NATO accession and after accession/invitation to NATO



C. COMPARISON OF COUNTRY GROUP MEAN ME TO ME=2% OF GDP

This chapter compared the means of all three country groups to the value of ME = 2% of GDP, in order to determine if the countries on average were able to reach the informal NATO requirement on ME as percentage of GDP.

1. Visegrad Country ME Comparison to ME = 2% of GDP

When comparing the means on the difference in ME to ME=2% of GDP of the Visegrad country group it is possible to see that the mean ME is 0.131 lower than 2%; in this case it would mean that the countries in this sample time (five years before NATO accession and two years after that) were not spending the NATO required 2% of GDP on ME.

Table 46. Visegrad countries ME to 2% of GDP

Visegrad countries t-Test

	<i>Variable 1</i>
Mean	1.88
Variance	0.026
Observations	8

2. Baltic Country ME Comparison to ME = 2% of GDP

Analyzing the ME means for Baltic countries on the difference of the ME mean to 2% of GDP, it is possible to see that the Baltic countries are doing even worse on average than the Visegrad countries. They spent only 1.39 % on ME on average during the sample time (five years prior to NATO accession and two years after it).

Table 47. Baltic countries ME to 2% of GDP

Baltic countries t-Test

	<i>Variable 1</i>
Mean	1.39
Variance	0.05
Observations	8

3. Adriatic Country ME Comparison to ME = 2% of GDP

When comparing the mean ME spending of the Adriatic countries to ME of 2%, the results were surprising, in that this group was the only one of the groups which spent more than 2% of GDP (on average) on ME.

It is assumed that the Yugoslavian wars would have an impact on the levels on ME—Croatia spent well over 2% of GDP on ME until 2002 and FYROM faced an insurgency in 2001, which caused a rise in its ME to 6.1% of GDP.

Table 48. Adriatic country ME to 2% of GDP

Adriatic countries t-Test

	<i>Variable 1</i>
Mean	2.18
Variance	0.34
Observations	8

THIS PAGE INTENTIONALLY LEFT BLANK

VIII. TRENDS IN ME BY CATEGORIES AFTER ACCESSION TO NATO

In analyzing the ME trends of the two enlargement country groups who are now NATO members, the author will try to find common expenditure patterns and evaluate if these patterns can be used to predict the spending trends of the third collective enlargement wave.

A. NATO MEMBERS BEFORE ACCESSION TO NATO

Central and Eastern European countries have undergone major changes after the end of the Cold War, which also impacted their ME behavior and its spending breakdown. There was a shift away from the inherited Soviet-style armed forces (for the Visegrad countries), used during the Warsaw Pact era, to modern armed forces ready to jointly operate with other NATO armed forces.

It was widely acknowledged that these old-style armed forces were too large and that the countries (with their weak economies) could not afford them—the burden on the economies was just too big.⁹⁸ On the other hand, the Baltic countries needed to establish their defense forces from scratch. This they did, mostly using the military infrastructure left by the Soviet Army.

In the beginning and in the mid 1990s, the Visegrad countries made large cuts to ME (basically halving expenditures from their Cold War levels). Also, similar and even more drastic cuts were applied to the military personnel numbers as major procurement programs were stopped and training levels decreased.⁹⁹ The story was quite different for the Baltic countries—there was simply nothing there to cut, as these countries had only recently regained their independence.

⁹⁸ “Military Matter, Beyond Prague,” NATO website, <http://www.nato.int/docu/review/2002/issue3/english/military.html#>, (accessed May 20, 2008).

⁹⁹ Ibid.

These reforms, of course, were not easy. The issue was always there: butter or guns. As countries struggled economically, there was an internal fight for the scarce funds among services and spending categories within the military budgets.

Therefore, it is possible to argue that accepting the Central and Eastern European countries to NATO was more a political than a capabilities based decision and

...while there is broad political support for the United States' war on terrorism, the absence of direct and immediate threats to the Central and Eastern European states suggests that more dramatic increases in defense spending are unlikely in future and Central and Eastern European governments face the difficult task of reconciling their limited resources available for defense with their commitment to participate in international peace-support operations, the declining operational effectiveness of the bulk of the armed forces and postponed procurement decisions.¹⁰⁰

This could result in a delay in development of the national armed forces, and reliance on NATO in cases of emergencies.

Of course, these countries have contributed their share to NATO international operations (and done well), in particular the NATO-led operations in the Balkans.

Central and Eastern European forces that have participated in these operations have generally performed well and have gradually taken on more demanding roles. Participation in these operations has contributed to the professionalization of the participating units. It may also have a positive trickle-down effect on the countries' armed forces more broadly, as soldiers are rotated into and out of the operations.¹⁰¹

Most of the post-communist Central and Eastern European countries found out that the defense transformation was more difficult and also slower than was expected when these reforms started, and additional reforms were required after joining NATO.

Tools provided by NATO (PfP and MAP) were useful to streamline the transformation processes and to show weakness which should be improved in order to enhance the new NATO members' capabilities.

¹⁰⁰ "Military Matter, Beyond Prague."

¹⁰¹ Ibid.

Involvement of the new NATO members in NATO defense planning with the adoption of the new Strategic Concept (which launched the Defense Capabilities Initiative that resulted in the force goals) also put additional stress on the modernization issues of the armed forces and increase of their rapid reaction time and mobility.

In the Visegrad countries, the manpower reductions in the early 1990s were not followed by similar cuts in assets (for example, the Polish armed forces were still using high-maintenance equipment and munitions of little military and training value, such as T-55 tanks and 100 mm shells).¹⁰²

Another problem for the armed forces were the large stockpiles of obsolete weapons which needed to be monitored; therefore; the governments tried to sell these stockpiles, but generated funds have been usually much lower than predicted.

In order to use the funds more effectively, Central and Eastern European countries are starting to evaluate changes to the procurement procedures and use of outsourcing services to the private sector.¹⁰³

B. NEW NATO MEMBER SPENDING PATTERNS

1. Spending on Personnel

As mentioned before, the end of the Cold War left the Visegrad countries with large armed forces which they were not able to sustain. There already have been reforms in place to cut the personnel number significantly prior to NATO membership, but as can be seen from the sample data Poland (which had the largest armed forces of these three countries) is still cutting funds for personnel.

The Czech Republic, after initial cuts at the start of this millennium, increased the personnel expenditure, then decreased and again is committing more funds for personnel. There is no common trend in these activities.

¹⁰² "Military Matter, Beyond Prague."

¹⁰³ Ibid.

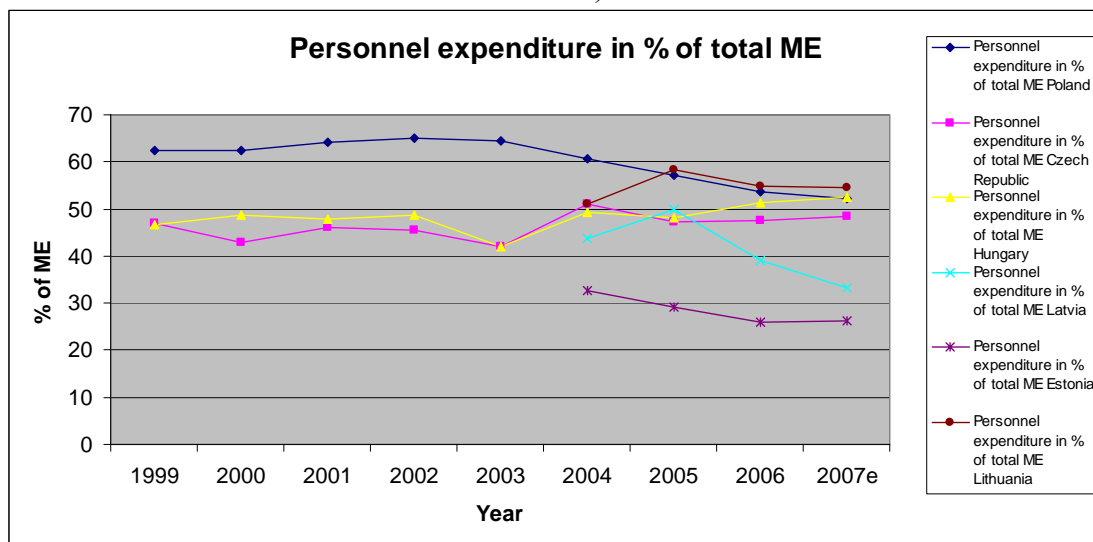
The same can be said for Hungary (which had the smallest armed forces of these three countries)—expenditures were cut, and then increased again.

Table 49. Visegrad, Baltic country Personnel expenditure as % of total ME (From: NATO)

Personnel expenditure in % of total ME						
	Poland	Czech Republic	Hungary	Latvia	Estonia	Lithuania
1999	62.4	46.9	46.7			
2000	62.3	42.8	48.7			
2001	64.3	46	47.9			
2002	64.9	45.5	48.7			
2003	64.6	41.9	41.9			
2004	60.6	51.1	49.4	43.8	32.8	51.1
2005	57.3	47.2	48.1	49.8	29.2	58.2
2006	53.8	47.4	51.2	39.2	26	54.8
2007e	52.1	48.4	52.5	33.2	26.2	54.5

The Baltic countries: they have only been members of NATO for four years. Therefore it is hard to predict future personnel spending trends, but it is possible to observe an increase in military personnel pay for Latvia and Lithuania in 2005. Otherwise, it could be said that the trend is toward a decrease in personnel costs as a percentage of ME.

Table 50. Visegrad, Baltic country Personnel expenditure as% of total ME (From: NATO)



2. Spending on Equipment

Analyzing this spending category, the trend for the Baltic countries is clear: spending has increased each year (5% for Latvia over the last four years, 5% for Estonia and 7% for Lithuania).

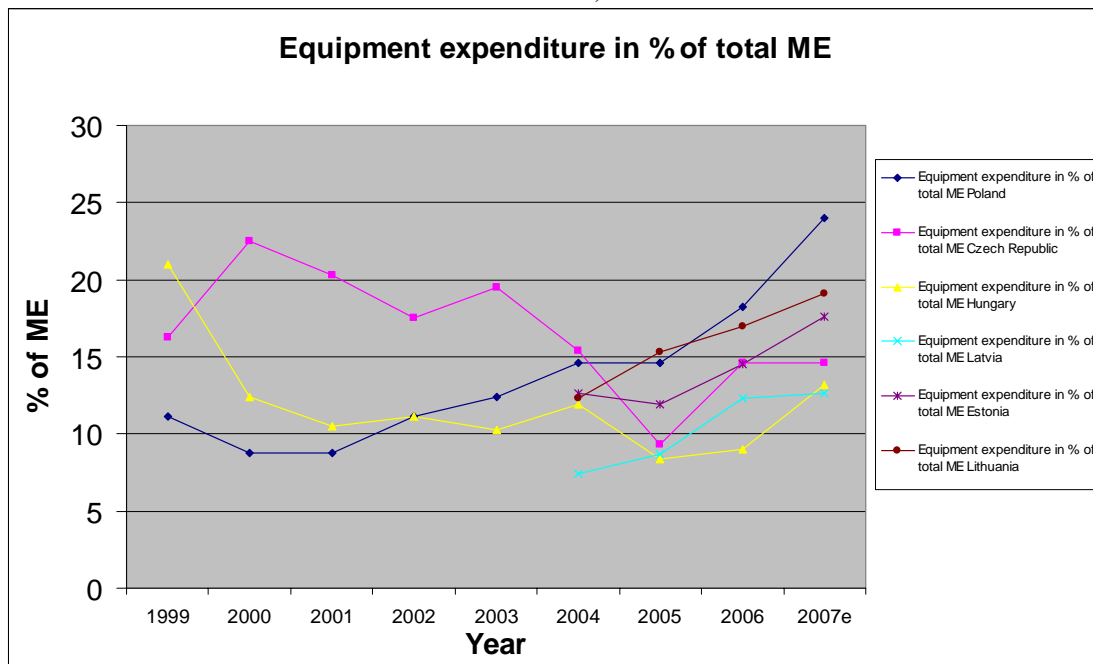
Table 51. Visegrad, Baltic country Equipment expenditure as % of total ME (From: NATO)

Equipment expenditure in % of total ME						
	Poland	Czech Republic	Hungary	Latvia	Estonia	Lithuania
1999	11.1	16.3	21			
2000	8.8	22.5	12.4			
2001	8.8	20.3	10.5			
2002	11.1	17.5	11.1			
2003	12.4	19.5	10.3			
2004	14.6	15.4	11.9	7.4	12.6	12.3
2005	14.6	9.3	8.4	8.7	11.9	15.3
2006	18.2	14.6	9	12.3	14.5	17
2007e	24	14.6	13.2	12.6	17.6	19.1

Among the Visegrad countries, only in the case of Poland is it possible to see a continuous increase in ME on Equipment; the percentage has more than doubled over the last nine years.

The data shows no trends for the Czech Republic and Hungary. ME levels are fluctuating on a yearly basis.

Table 52. Visegrad, Baltic country Equipment expenditure as % of total ME (From: NATO)



3. Spending on Infrastructure

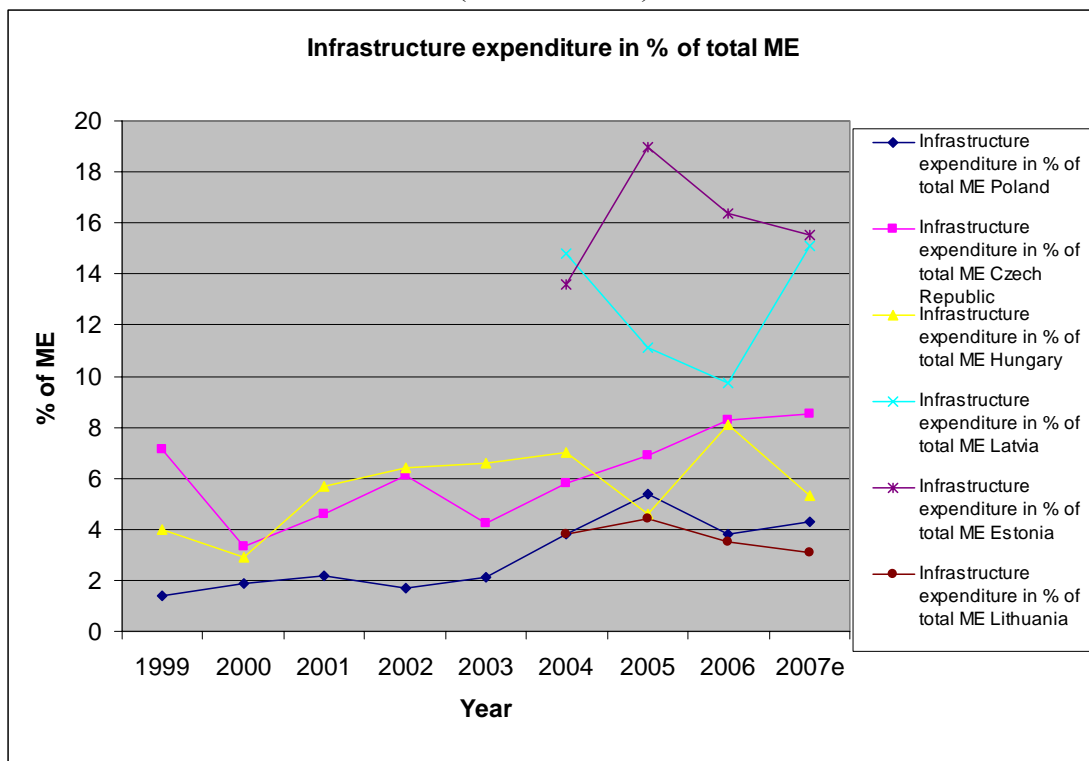
Analyzing the Visegrad countries' infrastructure spending, it is possible to observe that Poland has increased its infrastructure spending amount three times during the last nine years; the Czech Republic and Hungary have also increased their spending levels.

Table 53. Visegrad, Baltic country Infrastructure expenditure as % of total ME (From: NATO)

Infrastructure expenditure in % of total ME						
	Poland	Czech Republic	Hungary	Latvia	Estonia	Lithuania
1999	1.4	7.1	4			
2000	1.9	3.3	2.9			
2001	2.2	4.6	5.7			
2002	1.7	6.1	6.4			
2003	2.1	4.2	6.6			
2004	3.8	5.8	7	14.8	13.6	3.8
2005	5.4	6.9	4.6	11.1	19	4.4
2006	3.8	8.3	8.1	9.7	16.4	3.5
2007e	4.3	8.5	5.3	15.1	15.5	3.1

When looking at infrastructure spending data for the Baltic countries, it can be seen that Lithuanian spending is different from that of Latvia and Estonia. This could lead to a conclusion that development of infrastructure is not as high a priority for Lithuania as for the other Baltic countries (both Latvia and Estonia have slight increases in this expenditure over the last four years).

Table 54. Visegrad, Baltic country Infrastructure expenditure as % of total ME
(From: NATO)



4. Spending on Other Expenditure (Expenditures not Covered in Other Categories: Transportation, Communications, Administrative Expenditures)

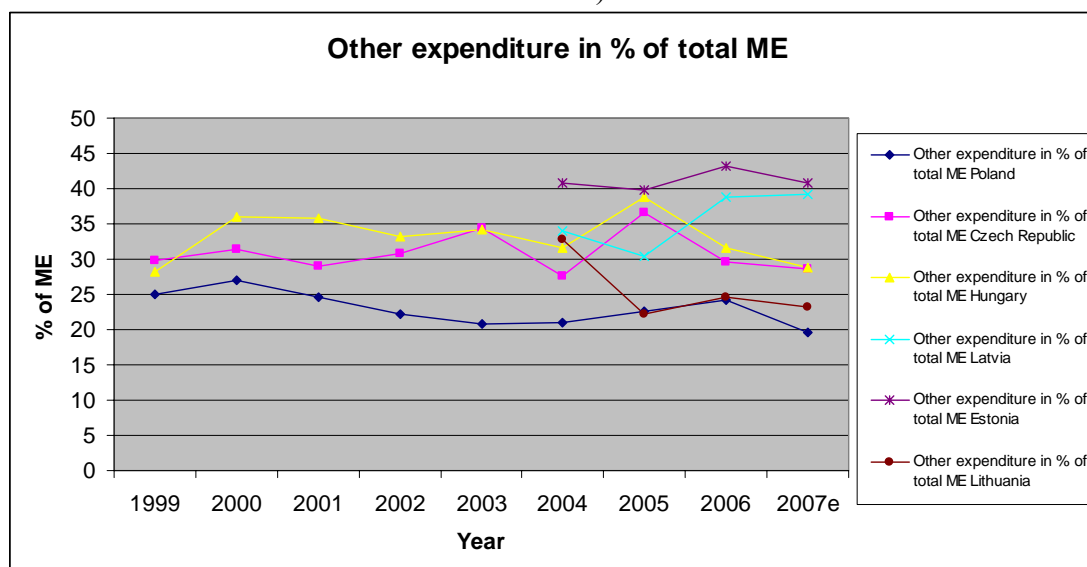
In the last nine years, Poland has decreased its ME on other expenditures, from 25.1% in 1999 to 19.6% in 2007. On the other hand, it is possible to see that Hungary and the Czech Republic have kept funding levels for other expenses at the same level for the last nine years.

Table 55. Visegrad, Baltic country Other expenditure in % of total ME (From: NATO)

Other expenditure in % of total ME						
	Poland	Czech Republic	Hungary	Latvia	Estonia	Lithuania
1999	25.1	29.8	28.3			
2000	27.1	31.5	36.1			
2001	24.6	29.1	35.9			
2002	22.3	30.9	33.2			
2003	20.9	34.4	34.3			
2004	21.1	27.7	31.7	34	40.9	32.8
2005	22.7	36.6	38.8	30.4	39.9	22.2
2006	24.2	29.7	31.7	38.8	43.2	24.6
2007e	19.6	28.6	28.9	39.2	40.8	23.3

In analyzing the Baltic states' spending in the other expenses category, it is not possible to see any common trends in the data; Latvia has increased its commitment, Estonian spending levels are stable and have not changed, and Lithuania has decreased its commitment from 32.8% to 23.3%.

Table 56. Visegrad, Baltic country Other expenditure in % of total ME (From: NATO)



IX. CONCLUSIONS

Conclusions will be divided into the following sections: general observations, t-test of mean analysis of ME commitment data to 2% of GDP level, GDP correlations results, ME level relationships, and analysis of patterns and spending trends by category.

A. GENERAL OBSERVATIONS

1. The promise to join NATO has an impact on a country's ME level—it increases up to the membership point, and then starts to decrease.
2. None of the country groups who joined NATO—the Visegrad and Baltic countries—on average reached the NATO informal level of ME as 2% of GDP.
3. Tools provided by NATO to aspirant countries (PfP and MAP) were useful in order to prepare the countries for full fledged NATO membership.
4. NATO is slowly converting from a military (capabilities based) alliance into a political alliance, as the commitment levels to ME in these countries are below NATO's requirement of 2% of GDP.

B. NEW NATO MEMBER AND NATO INVITEE ME MEAN COMPARISON TO ME AS 2% OF GDP

1. For the Visegrad countries, it is possible to see that the mean ME is 0.131 lower than 2%.
2. For the Baltic countries, the difference from the NATO requirement is even bigger; they spent only 1.39% on ME, on average, during the sample time.
3. For the Adriatic countries, the results were surprising; this group was the only one of the groups which spent more than 2% of GDP on ME, on average.

C. NEW NATO MEMBER AND NATO INVITEE GDP CHANGE IN PERCENT CORRELATION

1. The Visegrad countries' economic development can be characterized as having a strong positive relationship—the correlation coefficient is over 0.7.

2. Economic development of the Baltic countries is even closer—the correlation coefficient ranges from 0.83 to 0.95 positive.
3. The Adriatic countries' economic development has a weaker relationship, but is still positive (0.42 to 0.66).
4. In cross comparison, the economic development of all three country groups has a medium to strong positive relationship (from 0.62 to 0.93).

D. NEW NATO MEMBER AND NATO INVITEE ME AS % OF GDP RELATIONSHIPS

1. ME expenditure levels for the Visegrad countries have a medium to strong (0.59 – 0.75) positive relationship.
2. The Baltic countries' ME has a weak to strong positive relationship (from 0.41 to 0.71).
3. The Adriatic country ME levels have no positive linear relationship—the data is widely scattered.
4. Cross comparing all three groups, it is clear that there is no positive relationship in ME levels as % of GDP.
5. There is an alarming trend—two out of three country groups in the sample period showed a decrease of commitment to ME after accession/invitation to NATO.

E. NEW NATO MEMBER ME SPENDING CATEGORY TRENDS AND PATTERNS

1. **Personnel expenditure** – Poland is still cutting funds for personnel. The Czech Republic and Hungary show no pattern in personnel expenditure. The Baltic countries (except Latvia and Lithuania in 2005) show a decrease of personnel costs as percentage of ME.
2. **Equipment expenditure** – The Baltic countries are increasing spending year by year, as is Poland; the spending percentage has more than doubled over the last nine years. For the Czech Republic and Hungary, there is no trend in the data.
3. **Infrastructure expenditure** - Poland has increased its infrastructure spending three times during the last nine years, as have the Czech Republic and Hungary. Lithuanian spending is different from that of Latvia and Estonia, which could lead to the conclusion that infrastructure development is not as much of a priority as it is in the other Baltic countries.
4. **Other expenses expenditure** - Poland has decreased its ME on other expenses (from 25.1% in 1999 to 19.6% in 2007). Hungary and the Czech

Republic have kept funding at the same level for the last nine years. The Baltic countries show no common trends in their spending.

5. It is hard to predict future spending trends for the Adriatic countries based on the analysis of data for the previous enlargement wave countries, as the remains of the previous regimes (Albania) are different in each of the Adriatic countries and they had different paths to independence (FYROM and Croatia).
6. The only prediction which could be made by spending categories is that Equipment expenditure will become bigger in the future as modern weapons and weapon systems continue growing in complexity, and thus in price.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

- “Albania Armed Forces.” The Centre for South East European Studies website, http://www.csees.net/?page=country_section&country_id=1&sec=8 (accessed May 20, 2008).
- “Albania Fact Book.” CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/al.html> (accessed May 20, 2008).
- “Albania, National Security.” Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+al0156\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+al0156)) (accessed May 20, 2008).
- “Albanian Defense Reform Priorities.” Albanian MoD website, <http://www.mod.gov.al/index.php?crd=0,0,0,0,1,Lng2> (accessed May 20, 2008).
- Beehner, Lionel. “NATO Looks to Expand Mission and Membership.” Council of Foreign Relations website, http://www.cfr.org/publication/11159/nato_looks_to_expand_mission_and_membership.html?breadcrumb=%2Fregion%2F396%2Fnato#7 (accessed May 20, 2008).
- Bozinovic, Davor. “Transforming Society – Croatia’s Way to NATO.” Konrad-Adenauer-Stiftung website, http://www.kas.de/proj/home/pub/40/16/dokument_id-11948/index.html (accessed May 20, 2008).
- “Country Profile Hungary.” BBC website, http://news.bbc.co.uk/1/hi/world/europe/country_profiles/1049641.stm (accessed May 20, 2008).
- “Croatia Fact Book.” CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/hr.html> (accessed May 20, 2008).
- “Croatian Armed Forces.” Encyclopedia of Nations website, <http://www.nationsencyclopedia.com/Europe/Croatia-ARMED-FORCES.html> , (accessed May 20, 2008).
- “Czech Republic Armed Forces.” Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-3751.html> (accessed May 20, 2008).
- “Czech Republic Fact Book.” CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/ez.html> (accessed May 20, 2008).
- Danov, Vassil. Comparative Analysis of the Reforms in the Armies of the Czech Republic, Hungary, Poland and Bulgaria during 1990 – 1998 Period. NATO Research Fellowship Program, 2001.

- Delevic, Milica. "Regional Cooperation in the Western Balkans." Chaillot Paper no. 104. Paris: EU Institute for Security Studies, 2007.
- Ek, Carl W. "NATO's Prague Capability Commitment." Federation of American Scientists website, <http://www.fas.org/sgp/crs/row/RS21659.pdf> (accessed May 20, 2008).
- Ek, Carl W. *NATO Common Funds Burden Sharing: Background and Current Issues*. Congressional Research Service, Library of Congress, 2006.
- "Estonia, National Security." Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+ee0027\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+ee0027)) (accessed May 20, 2008).
- "FYROM Fact Book." CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/mk.html> (accessed May 20, 2008).
- Garamone, Jim. "NATO Invites Seven Nations to Join." Defense Link Website, <http://www.defenselink.mil/news/newsarticle.aspx?id=42466> (accessed May 20, 2008).
- "Greece Refuses FYROM's NATO Accession Bid." Embassy of Greece in U.S. website, <http://www.greekembassy.org/Embassy/content/en/Article.aspx?office=1&folder=19&article=23096> (accessed May 20, 2008).
- Hartley, Keith and Todd Sandler. "NATO Burden-Sharing: Past and Future." *Journal of Peace Research*, 1999, Vol. 36, No. 6, 665-680.
- Hartley, Keith and Todd Sandler. *The Economics of Defense Spending – An International Survey*. Routledge, 1990.
- "History of the Lithuanian Armed Forces." Ministry of National Defense of Lithuania website, http://www.kam.lt/armed_forces/history/ (accessed May 20, 2008).
- Homburg, Morris. *Basic Statistics: A Modern Approach*. Harcourt Brace Jovanovich Inc, 1974.
- "Hungarian Armed Forces." Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-5939.html> (accessed May 20, 2008).
- "Hungary Fact Book." CIA website, <https://www.cia.gov/library/publications/the-world-factbook/geos/hu.html> (accessed May 20, 2008).
- "Latvia, National Security." Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+lv0029\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+lv0029)) (accessed May 20, 2008).

- “Latvian Independence Restoration and Establishment of Defense Structures.” MoD Latvia website, [http://www.mod.gov.lv/Ministrija/Vesture/Latvijas_neatkaribas_atjaunosana_un_aizsardzibas_strukturu_izveide\(1991\).aspx](http://www.mod.gov.lv/Ministrija/Vesture/Latvijas_neatkaribas_atjaunosana_un_aizsardzibas_strukturu_izveide(1991).aspx) (accessed May 20, 2008).
- “Latvian National Armed Forces Structure and Tasks.” MoD Latvia website, <http://www.mod.gov.lv/Nacionalie%20brunotie%20speki/NBS%20Struktura.aspx> (accessed May 20, 2008).
- Le Mière, Christian. *Sentinel, Security Assessment - Central Europe and the Baltic States*. Jane’s Defense Review, 2007.
- “Lithuania, National Security.” Library of Congress Country Studies website, [http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+lt0028\)](http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+lt0028)) (accessed May 20, 2008).
- “Lithuanian Armed Forces.” Ministry of National Defense of Lithuania website, http://www.kam.lt/armed_forces (accessed May 20, 2008).
- “Military Matters, Beyond Prague.” NATO website, <http://www.nato.int/docu/review/2002/issue3/english/military.html#> (accessed May 20, 2008).
- “NATO Decision on Open Door Policy.” NATO website, <http://www.nato.int/docu/update/2008/04-april/e0403h.html> (accessed May 20, 2008).
- “NATO Headquarters Tirana.” NATO Headquarters Tirana website, <http://www.afsouth.nato.int/organization/NHQTIRANA/index.htm> (accessed May 20, 2008).
- “NATO – Russia Compendium of Financial and Economic Data Relating to Defense for 2006.” NATO website, <http://www.nato.int/docu/pr/2006/p06-159.pdf> (accessed May 20, 2008).
- “NATO’s Relations with Albania.” NATO website, http://www.nato.int/issues/nato_albania/evolution.html (accessed May 20, 2008).
- “NATO’s Relations with Croatia.” NATO website, http://www.nato.int/issues/nato_croatia/index.html (accessed May 20, 2008).
- NATO website, <http://www.nato.int/docu/pr/> (accessed May 20, 2008).
- “Organization of Armed Forces.” Ministry of Defense FYROM website, <http://www.morm.gov.mk:8080/morm/en/ARM/Organization.html> (accessed May 20, 2008).
- “Partnership for Peace.” NATO website, <http://www.nato.int/docu/handbook/2001/hb030201.htm> (accessed May 20, 2008).

- “Poland in NATO.” Warsaw Voice website, <http://www2.warsawvoice.pl/old/v542/nato/n7.htm> (accessed May 20, 2008).
- “Poland’s Armed Forces.” Website Based on the Country Studies Series by Federal Research Division of the Library of Congress, <http://www.country-data.com/cgi-bin/query/r-10798.html> (accessed May 20, 2008).
- Prague Post website, <http://www.praguepost.com/P02/2002/20814/news1.php> (accessed May 20, 2008)
- “Professional Army.” Czech Ministry of Defense website, <http://www.army.cz/scripts/detail.php?id=5762> (accessed May 20, 2008).
- Sedivy, Jiri. “Czech Military Transformation: An Analysis.” *Military Technology*, vol. 29, no. 5, 2005, 33-40.
- “Signatures of NATO PfP.” NATO website, <http://www.nato.int/pfp/sig-cntr.htm>, (accessed May 20, 2008).
- Snedecor, George W. and William G. Cochran. *Statistical Methods*, 6th ed. The Iowa State University Press, 1974.
- Stockholm International Peace Research Institute website http://www.sipri.org/contents/milap/milex/mex_database1.html (accessed May 20, 2008).
- Stockholm International Peace Research Institute website http://www.sipri.org/contents/milap/milex/mex_definition.html (accessed May 20, 2008).
- Szayna, Thomas S. *NATO Enlargement, 2000-2015 Determinants and Implications for Defense Planning and Shaping*. Rand Corporation, 2001.
- “The 1995 Study on NATO's Enlargement.” NATO website, <http://www.nato.int/docu/handbook/2001/hb030101.htm> (accessed May 20, 2008).
- “The Membership Action Plan.” NATO website, <http://www.nato.int/docu/handbook/2001/hb030103.htm> (accessed May 20, 2008).
- “The North Atlantic Treaty (Washington, 1949).” NATO website, <http://www.nato.int/docu/basic/txt/treaty.htm> (accessed May 20, 2008).
- “The Process of NATO Enlargement,” NATO website, <http://www.nato.int/docu/handbook/2001/hb0301.htm> (accessed May 20, 2008).
- “The Process of NATO Enlargement.” NATO website, <http://www.nato.int/docu/handbook/2001/hb0301.htm> (accessed May 20, 2008).

“Treaty of Friendship, Co-operation and Mutual Assistance.” Fordham University website, <http://www.fordham.edu/halsall/mod/1955warsawpact.html> (accessed May 20, 2008).

“Visegrad Group.” Visegrad Group website, <http://www.visegradgroup.eu/main.php?folderID=925> (accessed May 20, 2008).

“What Are the Estonian Defense Forces.” Estonian MoD website, http://www.mil.ee/index_eng.php (accessed May 20, 2008).

Ullman, Neil R. *Statistics: An Applied Approach*. Xerox College Publishing, 1972.

World Bank website, <http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=135> (accessed May 20, 2008).

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California